

AD-A098 571

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
14819AT LANCE, MISSILE NUMBER 4275, ROUND NUMBER 363-APL, 27 FE--ETC(U)
FEB 81

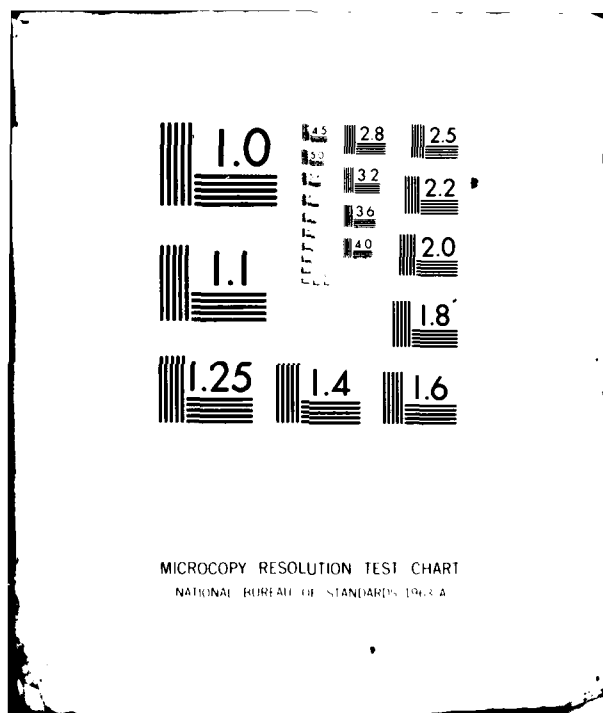
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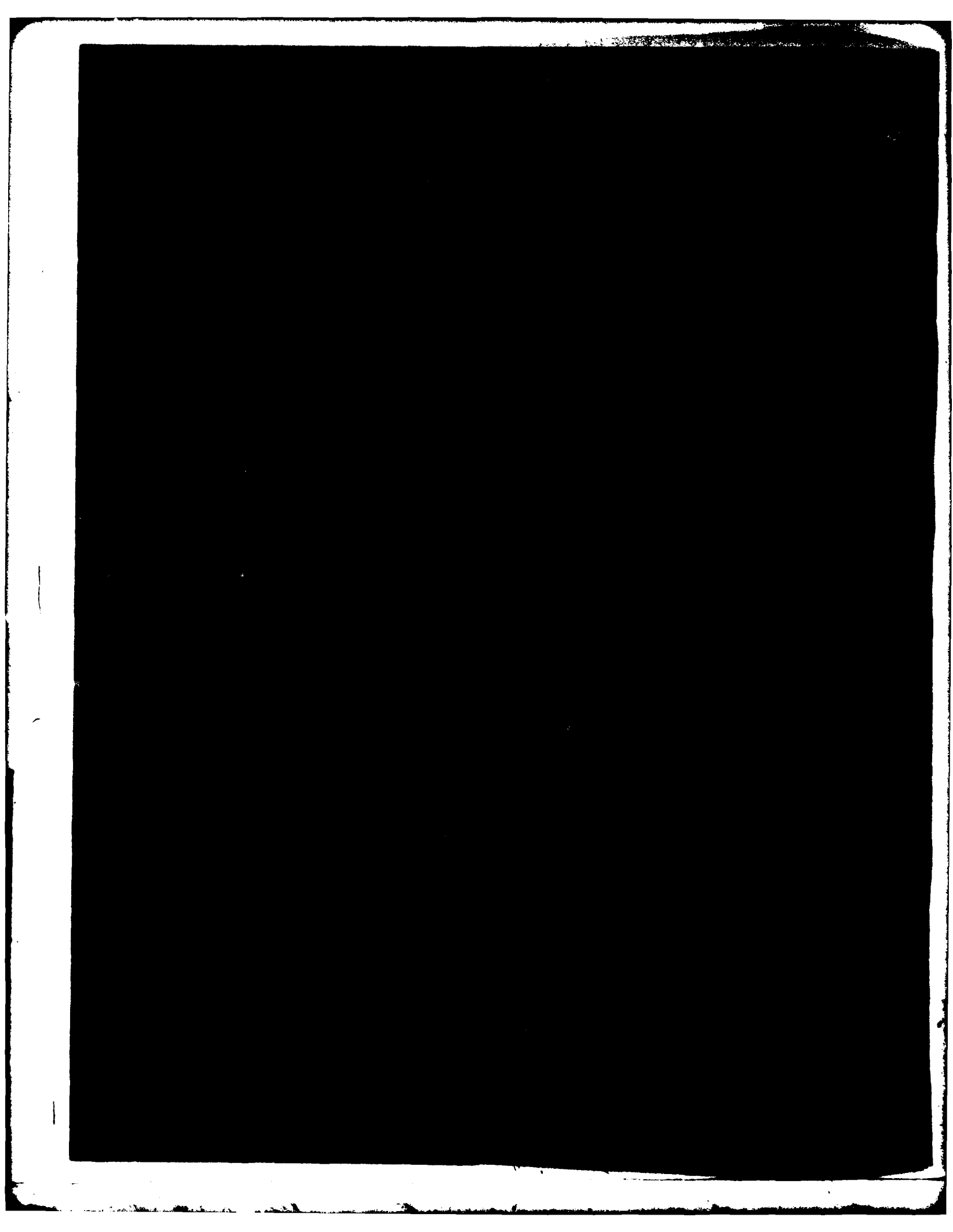
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| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 14819AT LANCE, Missile Number 4275, Round Number 363-APL presented in tabular form. | | |

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

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| DTIC TAB | <input type="checkbox"/> |
| Unannounced | <input type="checkbox"/> |
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| Distribution/ | |
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| Dist | Avail and/or |
| A | Special |

INTRODUCTION

14819AT LANCE, Missile Number 4275, Round Number 363-APL,
was launched from LC-39, White Sands Missile Range (WSMR), New
Mexico, at 1002 on 27 FEB 1981. The scheduled launch time
was 1000 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-39 met site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from **Single Theodolite** observation at:

SITE AND ALTITUDE

| | | |
|-------|-------------|----------|
| LC-39 | 1740 Meters | 0950 MST |
| LC-39 | 0960 Meters | 1000 MST |

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME

| | |
|-----|----------|
| WSD | 0950 MST |
| SMR | 0900 MST |
| E28 | 0950 MST |

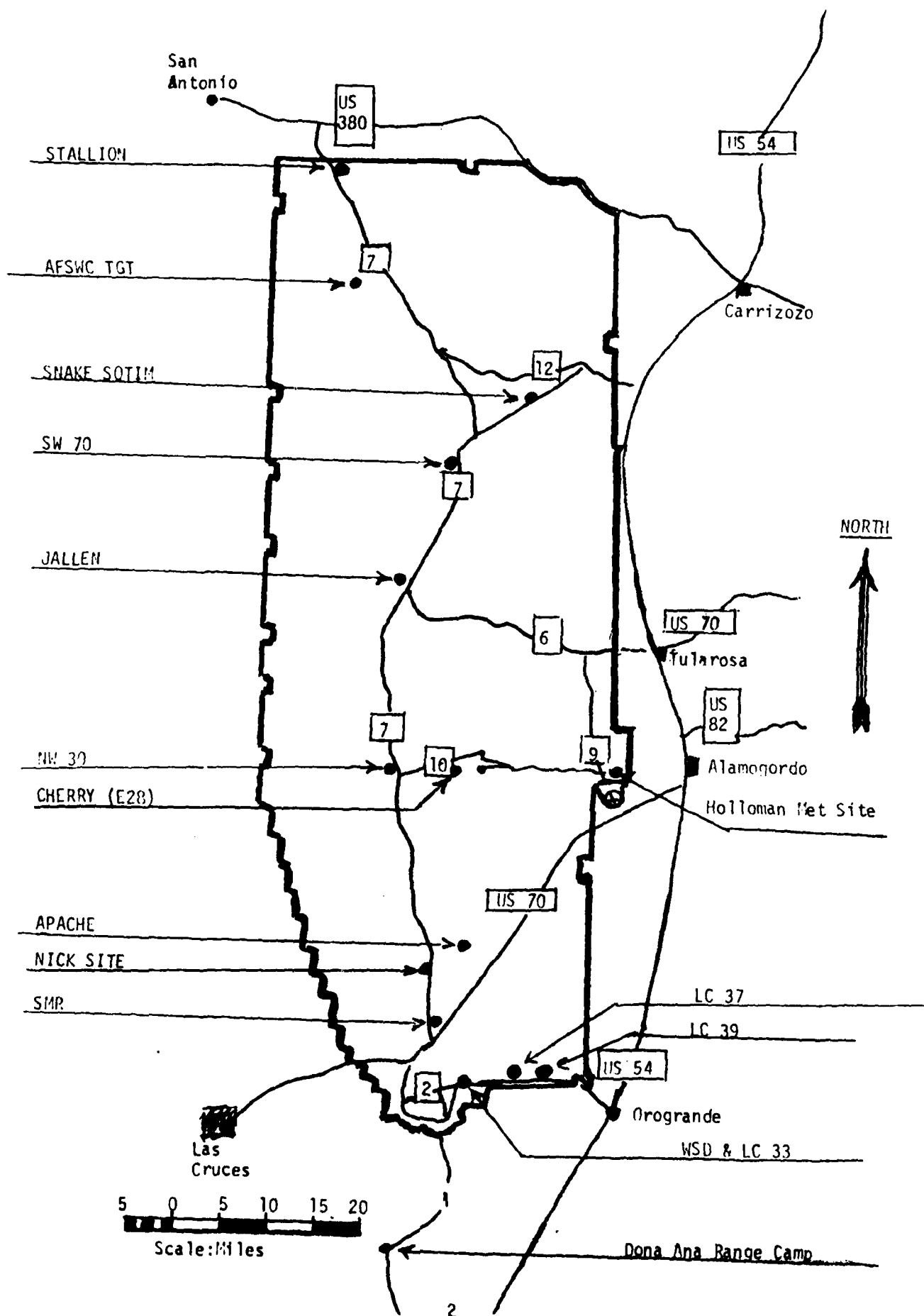


TABLE 1. Surface Observation taken at 1000 MST,
27 February 1981. at LC-39, 14819AT LANCE,
Missile Number 4275, Round Number 363-APL.

| | | |
|-------------------|------------|-------------------|
| ELEVATION | 4063.75 | FT/MSL |
| PRESSURE | 877.9 | MBS |
| TEMPERATURE | 12.3 | °C |
| RELATIVE HUMIDITY | 80 | % |
| DEW POINT | 8.9 | °C |
| DENSITY | 1066 | GM/M ³ |
| WIND SPEED | CALM | KTS |
| WIND DIRECTION | CALM | DEGREES |
| CLOUD COVER 1st | 10/SC/4000 | AMT/TYPER/HGT |

PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM LC-39 DATE 27 FEB 81 TIME 0950

COORDINATES (WSTM) X= 530.938.82 Y= 186.564.96 H= 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL X OR FEET AGL.

| HEIGHT AGL | DIRECTION DEGREES | SPEED KTS |
|---------------|----------------------|--------------|
| sfc | 100 | 01 |
| 60 | 146 | 03 |
| 120 | 090 | 02 |
| 180 | 098 | 02 |
| 240 | 115 | 02 |
| 300 | 004 | 03 |
| 360 | 021 | 03 |
| 420 | 015 | 03 |
| 480 | 017 | 04 |
| 540 | 028 | 04 |
| 600 | 030 | 04 |
| 660 | 028 | 04 |
| 720 | 042 | 04 |
| 780 | 028 | 04 |
| 840 | 027 | 04 |
| 900 | 028 | 03 |
| 960 | 065 | 02 |
| 1020 | 076 | 01 |
| 1080 | 169 | 03 |
| 1140 | 189 | 05 |
| 1200 | 191 | 06 |
| 1260 | 197 | 07 |
| 1320 | 202 | 09 |
| 1380 | 207 | 10 |
| 1440 | 212 | 12 |
| 1500 | 211 | 14 |
| 1560 | 212 | 15 |
| 1620 | 214 | 16 |
| 1680 | 217 | 18 |
| 1740 | 218 | 19 |

[illegible][illegible]

PILOT BALLOON: MEASURED WIND DATA

TABLE 3

RELEASED FROM LC-39

DATE 27 FEB 81

TIME 1000 MST

COORDINATES (WSTM)

$$\chi = 530,938.82$$
$$Y = 186,564.96$$
$$H = 4063.75$$

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL y OR FEET AGL .

[illegible][illegible][illegible]

STATION ALTITUDE 3989.00 FEET MSL
27 FEB. 81 0950 HRS MDT
ASCENSION NO. 138

SINGLE POINT LEVEL DATA
0500020150
WILF LADD'S

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 4

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 879.2 | 3989.0 | 11.9 | 7.8 | 76.0 |
| 871.6 | 4227.5 | 10.5 | 5.9 | 73.0 |
| 850.0 | 4913.7 | 9.6 | 4.0 | 68.0 |
| 783.2 | 7125.2 | 3.9 | 1.3 | 63.0 |
| 717.0 | 9478.4 | 1.8 | .9 | 94.0 |
| 709.0 | 10114.4 | .9 | -.1 | 93.0 |
| 671.0 | 11232.0 | -.1 | -1.1 | 93.0 |
| 582.2 | 14932.5 | -6.1 | -7.5 | 90.0 |
| 500.0 | 18811.0 | -12.0 | -14.3 | 83.0 |
| 461.6 | 20008.4 | -16.0 | -18.9 | 78.0 |
| 431.2 | 22488.2 | -19.0 | -22.3 | 75.0 |
| 416.4 | 23340.4 | -21.2 | -25.2 | 70.0 |
| 400.0 | 24313.2 | -23.0 | -26.6 | 72.0 |
| 300.0 | 31035.7 | -30.7 | -44.0 | 57.0 |
| 279.0 | 32661.7 | -43.0 | -49.5 | 48.0 |
| 250.0 | 35065.5 | -49.2 | | |
| 213.0 | 38454.6 | -58.5 | | |
| 200.0 | 39757.9 | -58.9 | | |
| 196.2 | 40156.2 | -57.1 | | |
| 184.0 | 41490.7 | -58.5 | | |
| 170.4 | 43088.2 | -56.8 | | |
| 150.0 | 45742.1 | -58.4 | | |
| 114.0 | 51332.9 | -66.1 | | |
| 100.0 | 53947.5 | -67.2 | | |
| 80.4 | 58282.2 | -68.0 | | |
| 73.8 | 59993.8 | -65.0 | | |
| 70.0 | 61055.3 | -66.0 | | |
| 67.6 | 61754.1 | -66.1 | | |
| 64.6 | 62672.2 | -62.0 | | |
| 58.4 | 64725.3 | -63.6 | | |
| 55.6 | 65729.2 | -60.3 | | |
| 50.0 | 67902.4 | -62.9 | | |
| 38.0 | 73578.2 | -56.1 | | |
| 30.0 | 78543.9 | -56.4 | | |
| 20.0 | 87120.0 | -53.4 | | |
| 17.0 | 90500.7 | -53.7 | | |
| 12.6 | 97050.4 | -47.3 | | |
| 11.7 | 98670.1 | -48.6 | | |
| 10.0 | 102112.3 | -46.0 | | |
| 7.4 | 108818.0 | -41.7 | | |

STATION ALTITUDE 3989.00 FEET MSL
27 FEB. 81 0950 HRS MST
ASCENSION. NO. 130

UPPER AIR DATA
0500Z0130
WHITE SANDS

GEODETTIC COORDINATES
32.40043 LAT N
106.37033 LONG W

TABLE 5

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GRAMS PER CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|--|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 3989.0 | 879.2 | 11.9 | 76.0 | 1069.6 | 659.2 | 180.0 | 1.9 | 1.000288 |
| 4000.0 | 870.8 | 11.8 | 75.9 | 1069.4 | 659.2 | 179.8 | 1.9 | 1.000287 |
| 4500.0 | 863.0 | 10.1 | 71.0 | 1057.1 | 657.0 | 142.1 | .4 | 1.000277 |
| 5000.0 | 847.3 | 9.4 | 68.6 | 1041.0 | 656.0 | 21.4 | 1.4 | 1.000270 |
| 5500.0 | 831.8 | 8.1 | 72.0 | 1026.6 | 654.5 | 14.6 | 2.9 | 1.000266 |
| 6000.0 | 816.5 | 6.8 | 75.4 | 1012.5 | 653.0 | 36.2 | 16.9 | 1.000262 |
| 6500.0 | 801.5 | 5.5 | 78.8 | 998.7 | 651.4 | 38.8 | 34.3 | 1.000257 |
| 7000.0 | 786.8 | 4.2 | 82.2 | 985.0 | 649.9 | 43.0 | 13.7 | 1.000253 |
| 7500.0 | 772.3 | 3.6 | 84.8 | 969.0 | 649.1 | 200.4 | 7.7 | 1.000249 |
| 8000.0 | 757.9 | 3.1 | 87.1 | 952.5 | 648.6 | 217.7 | 31.5 | 1.000245 |
| 8500.0 | 743.8 | 2.7 | 87.4 | 936.3 | 648.1 | 219.2 | 45.3 | 1.000242 |
| 9000.0 | 730.0 | 2.2 | 91.8 | 920.3 | 647.6 | 220.6 | 37.3 | 1.000238 |
| 9500.0 | 716.4 | 1.8 | 90.0 | 904.7 | 647.1 | 221.0 | 34.5 | 1.000234 |
| 10000.0 | 703.0 | 1.1 | 93.2 | 890.2 | 646.2 | 219.7 | 38.8 | 1.000229 |
| 10500.0 | 693.9 | .6 | 93.0 | 875.2 | 645.6 | 218.2 | 41.4 | 1.000225 |
| 11000.0 | 676.9 | .1 | 93.0 | 860.2 | 645.0 | 218.5 | 43.2 | 1.000221 |
| 11500.0 | 664.1 | -.5 | 92.8 | 846.0 | 644.2 | 217.5 | 44.6 | 1.000216 |
| 12000.0 | 651.5 | -1.3 | 92.4 | 832.6 | 643.2 | 218.8 | 45.9 | 1.000212 |
| 12500.0 | 639.1 | -2.2 | 92.0 | 819.3 | 642.2 | 220.6 | 47.2 | 1.000207 |
| 13000.0 | 627.0 | -3.0 | 91.6 | 806.2 | 641.2 | 221.8 | 48.4 | 1.000203 |
| 13500.0 | 615.1 | -3.8 | 91.2 | 793.4 | 640.2 | 221.3 | 49.4 | 1.000199 |
| 14000.0 | 603.4 | -4.6 | 90.8 | 780.8 | 639.2 | 220.9 | 50.6 | 1.000195 |
| 14500.0 | 591.9 | -5.4 | 90.4 | 768.3 | 638.2 | 220.5 | 52.0 | 1.000191 |
| 15000.0 | 580.7 | -6.2 | 89.9 | 756.1 | 637.2 | 220.0 | 54.0 | 1.000187 |
| 15500.0 | 569.4 | -7.0 | 89.0 | 743.6 | 636.3 | 219.4 | 56.7 | 1.000183 |
| 16000.0 | 558.3 | -7.7 | 88.1 | 731.3 | 635.3 | 218.9 | 59.5 | 1.000179 |
| 16500.0 | 547.5 | -8.5 | 87.2 | 719.2 | 634.4 | 218.4 | 62.3 | 1.000175 |
| 17000.0 | 536.8 | -9.2 | 86.3 | 707.3 | 633.5 | 218.9 | 63.4 | 1.000172 |
| 17500.0 | 526.4 | -10.0 | 85.4 | 695.7 | 632.5 | 219.7 | 63.8 | 1.000168 |
| 18000.0 | 516.2 | -10.8 | 84.5 | 684.2 | 631.6 | 220.6 | 63.1 | 1.000165 |
| 18500.0 | 506.1 | -11.5 | 83.6 | 672.9 | 630.6 | 221.5 | 62.1 | 1.000162 |
| 19000.0 | 496.2 | -12.4 | 82.5 | 661.9 | 629.6 | 222.6 | 61.3 | 1.000158 |
| 19500.0 | 486.4 | -13.4 | 81.3 | 651.4 | 628.3 | 223.6 | 60.5 | 1.000155 |
| 20000.0 | 476.8 | -14.4 | 80.0 | 641.0 | 627.1 | 224.5 | 61.2 | 1.000152 |
| 20500.0 | 467.3 | -15.4 | 78.8 | 630.8 | 625.8 | 225.2 | 62.1 | 1.000149 |
| 21000.0 | 458.0 | -16.3 | 77.7 | 620.6 | 624.6 | 225.4 | 63.7 | 1.000146 |
| 21500.0 | 448.8 | -17.2 | 76.8 | 610.4 | 623.5 | 225.6 | 65.2 | 1.000143 |
| 22000.0 | 439.8 | -18.1 | 75.9 | 600.2 | 622.4 | 225.3 | 66.0 | 1.000140 |
| 22500.0 | 431.0 | -19.0 | 74.9 | 590.3 | 621.3 | 225.0 | 66.9 | 1.000137 |
| 23000.0 | 422.2 | -20.3 | 72.0 | 581.4 | 619.7 | 224.0 | 67.5 | 1.000135 |

UPPER AIR DATA
0580020136
WHITE SANDS
TABLE 5 cont'

STATION ALTITUDE 3989.00 FEET MSL
27 FEB. 61 0950 HRS MST
ASCENSION NO. 138

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 23500.0 | 413.7 | -21.5 | -25.4 | 70.3 | 572.2 | 618.2 | 223.1 | 68.1 | 1.000132 |
| 24000.0 | 405.2 | -22.4 | -26.2 | 71.4 | 562.6 | 617.1 | 221.8 | 68.7 | 1.000130 |
| 24500.0 | 396.8 | -23.4 | -27.1 | 71.6 | 553.2 | 615.8 | 220.5 | 69.2 | 1.000127 |
| 25000.0 | 388.4 | -24.6 | -28.4 | 70.5 | 544.1 | 614.4 | 219.5 | 71.1 | 1.000125 |
| 25500.0 | 380.2 | -25.8 | -29.7 | 69.4 | 535.1 | 612.9 | 218.7 | 73.5 | 1.000122 |
| 26000.0 | 372.1 | -26.9 | -31.0 | 68.2 | 526.3 | 611.4 | 218.4 | 76.9 | 1.000120 |
| 26500.0 | 364.3 | -28.1 | -32.3 | 67.1 | 517.0 | 610.0 | 218.3 | 80.6 | 1.000118 |
| 27000.0 | 356.6 | -29.3 | -33.6 | 66.0 | 509.1 | 608.5 | 218.3 | 84.3 | 1.000116 |
| 27500.0 | 349.0 | -30.4 | -34.9 | 64.9 | 500.8 | 607.0 | 218.5 | 88.0 | 1.000114 |
| 28000.0 | 341.6 | -31.6 | -36.2 | 63.8 | 492.6 | 605.6 | 218.6 | 91.9 | 1.000111 |
| 28500.0 | 334.4 | -32.8 | -37.4 | 62.7 | 484.5 | 604.1 | 218.6 | 95.9 | 1.000109 |
| 29000.0 | 327.3 | -33.9 | -38.7 | 61.5 | 476.6 | 602.6 | 218.6 | 99.2 | 1.000108 |
| 29500.0 | 320.4 | -35.1 | -40.0 | 60.4 | 468.8 | 601.1 | 218.5 | 101.6 | 1.000106 |
| 30000.0 | 313.6 | -36.3 | -41.3 | 59.3 | 461.1 | 599.6 | 218.5 | 103.5 | 1.000104 |
| 30500.0 | 307.0 | -37.4 | -42.6 | 58.2 | 453.6 | 598.2 | 218.6 | 104.6 | 1.000102 |
| 31000.0 | 300.5 | -38.6 | -43.9 | 57.1 | 446.2 | 596.7 | 218.7 | 106.1 | 1.000100 |
| 31500.0 | 293.8 | -39.9 | -45.5 | 54.4 | 438.9 | 595.0 | 218.9 | 108.8 | 1.000098 |
| 32000.0 | 287.4 | -41.3 | -47.3 | 51.7 | 431.6 | 593.3 | 219.5 | 111.5 | 1.000097 |
| 32500.0 | 281.0 | -42.6 | -49.0 | 48.9 | 424.5 | 591.6 | 219.5 | 115.6 | 1.000095 |
| 33000.0 | 274.7 | -43.9 | -51.6 | 41.2** | 417.4 | 589.9 | 220.1 | 119.8 | 1.000093 |
| 33500.0 | 268.5 | -45.2 | -55.1 | 31.3** | 410.3 | 588.2 | 220.9 | 124.0 | 1.000092 |
| 34000.0 | 262.5 | -46.5 | -59.3 | 21.3** | 403.3 | 586.6 | 221.6 | 128.2 | 1.000090 |
| 34500.0 | 256.5 | -47.7 | -65.1 | 11.3** | 396.5 | 584.9 | 222.1 | 131.4 | 1.000088 |
| 35000.0 | 250.7 | -49.0 | -80.3 | 1.3** | 389.8 | 583.2 | 222.6 | 134.2 | 1.000087 |
| 35500.0 | 244.9 | -50.4 | | | 383.0 | 581.4 | 222.9 | 137.2 | 1.000085 |
| 36000.0 | 239.2 | -51.8 | | | 376.4 | 579.7 | 222.9 | 140.3 | 1.000084 |
| 36500.0 | 233.6 | -53.1 | | | 369.9 | 577.9 | 228.6 | 143.2 | 1.000082 |
| 37000.0 | 228.2 | -54.5 | | | 363.5 | 576.1 | 242.1 | 151.9 | 1.000081 |
| 37500.0 | 222.8 | -55.9 | | | 357.3 | 574.2 | | | 1.000080 |
| 38000.0 | 217.6 | -57.3 | | | 351.2 | 572.4 | | | 1.000078 |
| 38500.0 | 212.5 | -58.5 | | | 345.0 | 570.6 | | | 1.000077 |
| 39000.0 | 207.5 | -58.7 | | | 337.0 | 570.5 | | | 1.000075 |
| 39500.0 | 202.5 | -58.8 | | | 329.1 | 570.3 | | | 1.000073 |
| 40000.0 | 197.7 | -57.8 | | | 319.8 | 571.7 | | | 1.000071 |
| 40500.0 | 193.0 | -57.5 | | | 311.7 | 572.2 | | | 1.000069 |
| 41000.0 | 188.4 | -58.0 | | | 305.0 | 571.5 | | | 1.000068 |
| 41500.0 | 183.9 | -58.5 | | | 298.5 | 570.8 | | | 1.000066 |
| 42000.0 | 179.6 | -58.0 | | | 290.7 | 571.5 | | | 1.000065 |
| 42500.0 | 175.3 | -57.4 | | | 283.1 | 572.2 | | | 1.000063 |
| 43000.0 | 171.1 | -56.9 | | | 275.7 | 572.9 | | | 1.000061 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

AX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
27 FEB. 51 0950 HRS NST
ASCENSION: NO. 138

UPPER AIR DATA
0580020138
WHITE SANDS
TABLE 5 cont'

GEODLTIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CM ³ (SLM) | SPEED OF WIND KNOTS | WIND DATA DIRECTION DEGREES (TN) | INDEX OF REFRACTION. |
|--------------------------------|-----------------------|--|----------------------|-------------------------------------|---------------------------|--|----------------------------|
| 43500.0 | 167.1 | -57.0 | | 264.3 | 572.7 | | 1.000060 |
| 44000.0 | 163.1 | -57.3 | | 263.3 | 572.3 | | 1.000059 |
| 44500.0 | 159.2 | -57.7 | | 257.4 | 571.9 | | 1.000057 |
| 45000.0 | 155.4 | -58.0 | | 251.6 | 571.5 | | 1.000056 |
| 45500.0 | 151.8 | -58.3 | | 246.0 | 571.1 | | 1.000055 |
| 46000.0 | 148.1 | -58.8 | | 240.7 | 570.4 | | 1.000054 |
| 46500.0 | 144.5 | -59.4 | | 235.6 | 569.5 | | 1.000052 |
| 47000.0 | 141.0 | -60.1 | | 230.6 | 568.6 | | 1.000051 |
| 47500.0 | 137.6 | -60.8 | | 225.8 | 567.7 | | 1.000050 |
| 48000.0 | 134.3 | -61.5 | | 221.0 | 566.8 | | 1.000049 |
| 48500.0 | 131.0 | -62.2 | | 216.3 | 565.8 | | 1.000048 |
| 49000.0 | 127.8 | -62.9 | | 211.8 | 564.9 | | 1.000047 |
| 49500.0 | 124.7 | -63.6 | | 207.3 | 564.0 | | 1.000046 |
| 50000.0 | 121.7 | -64.3 | | 203.0 | 563.1 | | 1.000045 |
| 50500.0 | 118.8 | -65.0 | | 198.7 | 562.1 | | 1.000044 |
| 51000.0 | 115.9 | -65.6 | | 194.5 | 561.2 | | 1.000043 |
| 51500.0 | 113.0 | -66.2 | | 190.3 | 560.3 | | 1.000042 |
| 52000.0 | 110.3 | -66.4 | | 185.8 | 560.2 | | 1.000041 |
| 52500.0 | 107.5 | -66.6 | | 181.3 | 559.9 | | 1.000040 |
| 53000.0 | 104.9 | -66.8 | | 177.0 | 559.0 | | 1.000039 |
| 53500.0 | 102.3 | -67.0 | | 172.8 | 559.3 | | 1.000038 |
| 54000.0 | 99.7 | -67.2 | | 168.7 | 559.1 | | 1.000037 |
| 54500.0 | 97.3 | -67.3 | | 164.6 | 558.9 | | 1.000036 |
| 55000.0 | 94.8 | -67.4 | | 160.6 | 558.8 | | 1.000035 |
| 55500.0 | 92.5 | -67.5 | | 156.7 | 558.7 | | 1.000034 |
| 56000.0 | 90.2 | -67.6 | | 152.8 | 558.6 | | 1.000033 |
| 56500.0 | 87.9 | -67.7 | | 149.1 | 558.4 | | 1.000032 |
| 57000.0 | 85.8 | -67.8 | | 145.5 | 558.3 | | 1.000032 |
| 57500.0 | 83.6 | -67.9 | | 141.9 | 558.2 | | 1.000031 |
| 58000.0 | 81.6 | -67.9 | | 138.4 | 558.1 | | 1.000030 |
| 58500.0 | 79.5 | -67.6 | | 134.6 | 558.5 | | 1.000029 |
| 59000.0 | 77.6 | -66.7 | | 130.9 | 559.7 | | 1.000028 |
| 59500.0 | 75.6 | -65.9 | | 127.1 | 560.9 | | 1.000027 |
| 60000.0 | 73.8 | -65.0 | | 123.5 | 562.1 | | 1.000026 |
| 60500.0 | 72.0 | -65.5 | | 120.7 | 561.4 | | 1.000025 |
| 61000.0 | 70.2 | -65.9 | | 118.0 | 560.8 | | 1.000024 |
| 61500.0 | 68.5 | -66.1 | | 115.2 | 560.0 | | 1.000023 |
| 62000.0 | 66.8 | -65.0 | | 111.8 | 562.1 | | 1.000022 |
| 62500.0 | 65.2 | -62.8 | | 107.9 | 565.1 | | 1.000021 |
| 63000.0 | 63.6 | -62.3 | | 105.0 | 565.8 | | 1.000020 |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
27 FEB. 51
ASCENSION NO. 138

UPPER AIR DATA
0500020138
WHITE SANDS

REL. HUM. 39.90 PERCENT
TEMPERATURE
AIR DEWPOINT
DEGREES CENTIGRADE

GEOMETRIC ALTITUDE
MSL FEET

PRESSURE
MILLIBARS

TABLE 5 cont'

REL. HUM. DENSITY SPEED OF
PERCENT GM/CUBIC SOUND
WIND DATA
DIRECTION SPEED
DEGREES (TN) KNOTS

INDEX
OF
REFRACTION

| | | | | | | | |
|---------|------|-------|-------|-------|-------|------|----------|
| 63500.0 | 62.0 | -62.6 | 102.6 | 565.2 | 310.1 | 52.2 | 1.000023 |
| 64000.0 | 60.5 | -63.0 | 100.3 | 564.7 | | | 1.000022 |
| 64500.0 | 59.1 | -63.4 | 98.1 | 564.2 | | | 1.000022 |
| 65000.0 | 57.6 | -62.7 | 95.4 | 565.2 | | | 1.000021 |
| 65500.0 | 56.2 | -61.1 | 92.4 | 567.4 | | | 1.000021 |
| 66000.0 | 54.9 | -60.6 | 89.9 | 567.9 | | | 1.000020 |
| 66500.0 | 53.5 | -61.2 | 88.0 | 567.1 | | | 1.000020 |
| 67000.0 | 52.3 | -61.8 | 86.1 | 566.3 | | | 1.000019 |
| 67500.0 | 51.0 | -62.4 | 84.3 | 565.5 | | | 1.000019 |
| 68000.0 | 49.8 | -62.8 | 82.4 | 565.0 | | | 1.000018 |
| 68500.0 | 48.6 | -62.2 | 80.2 | 565.9 | | | 1.000018 |
| 69000.0 | 47.4 | -61.6 | 78.1 | 566.7 | | | 1.000017 |
| 69500.0 | 46.3 | -61.0 | 76.0 | 567.5 | | | 1.000017 |
| 70000.0 | 45.2 | -60.4 | 74.0 | 568.3 | | | 1.000016 |
| 70500.0 | 44.1 | -59.8 | 72.0 | 569.1 | | | 1.000016 |
| 71000.0 | 43.0 | -59.2 | 70.1 | 569.9 | | | 1.000016 |
| 71500.0 | 42.0 | -58.6 | 68.2 | 570.7 | | | 1.000015 |
| 72000.0 | 41.0 | -58.0 | 66.4 | 571.4 | | | 1.000015 |
| 72500.0 | 40.0 | -57.4 | 64.6 | 572.2 | | | 1.000014 |
| 73000.0 | 39.1 | -56.8 | 62.9 | 573.0 | | | 1.000014 |
| 73500.0 | 38.1 | -56.2 | 61.2 | 573.8 | | | 1.000014 |
| 74000.0 | 37.2 | -56.1 | 59.8 | 573.9 | | | 1.000013 |
| 74500.0 | 36.4 | -56.2 | 58.4 | 573.9 | | | 1.000013 |
| 75000.0 | 35.5 | -56.2 | 57.0 | 573.8 | | | 1.000013 |
| 75500.0 | 34.7 | -56.2 | 55.7 | 573.8 | | | 1.000012 |
| 76000.0 | 33.9 | -56.2 | 54.4 | 573.8 | | | 1.000012 |
| 76500.0 | 33.1 | -56.3 | 53.1 | 573.7 | | | 1.000012 |
| 77000.0 | 32.3 | -56.3 | 51.9 | 573.7 | | | 1.000011 |
| 77500.0 | 31.5 | -56.3 | 50.7 | 573.6 | | | 1.000011 |
| 78000.0 | 30.8 | -56.4 | 49.5 | 573.6 | | | 1.000011 |
| 78500.0 | 30.1 | -56.4 | 48.3 | 573.6 | | | 1.000011 |
| 79000.0 | 29.4 | -56.2 | 47.2 | 573.6 | | | 1.000010 |
| 79500.0 | 28.7 | -56.1 | 46.0 | 574.0 | | | 1.000010 |
| 80000.0 | 28.0 | -55.9 | 44.9 | 574.2 | | | 1.000010 |
| 80500.0 | 27.4 | -55.7 | 43.8 | 574.5 | | | 1.000010 |
| 81000.0 | 26.7 | -55.5 | 42.8 | 574.7 | | | 1.000010 |
| 81500.0 | 26.1 | -55.4 | 41.7 | 574.9 | | | 1.000009 |
| 82000.0 | 25.5 | -55.2 | 40.7 | 575.2 | | | 1.000009 |
| 82500.0 | 24.9 | -55.0 | 39.7 | 575.4 | | | 1.000009 |
| 83000.0 | 24.3 | -54.8 | 38.8 | 575.6 | | | 1.000009 |

AX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES
32.40043 LAT N
106.37033 LONG W

UPPER AIR DATA
0580020130
WHITE SANDS
TABLE 5 cont'

STATION ALTITUDE 3089.00 FEET MSL
27 FEB 81 0950 HRS MST
ASCENSION NO. 130

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND M/SEC | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|-------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 63500.0 | 23.7 | -54.7 | | 37.8 | 575.8 | 78.4 | 12.2 | 1.000009 |
| 64000.0 | 23.2 | -54.5 | | 36.9 | 576.1 | 74.5 | 11.7 | 1.000008 |
| 64500.0 | 22.6 | -54.3 | | 36.0 | 576.3 | 69.1 | 11.7 | 1.000008 |
| 65000.0 | 22.1 | -54.1 | | 35.2 | 576.5 | 63.6 | 11.7 | 1.000008 |
| 65500.0 | 21.6 | -54.0 | | 34.3 | 576.8 | 60.4 | 11.9 | 1.000008 |
| 66000.0 | 21.1 | -53.8 | | 33.5 | 577.0 | 61.4 | 12.0 | 1.000007 |
| 66500.0 | 20.6 | -53.6 | | 32.7 | 577.2 | 62.3 | 12.2 | 1.000007 |
| 67000.0 | 20.1 | -53.4 | | 31.9 | 577.5 | 64.1 | 12.3 | 1.000007 |
| 67500.0 | 19.6 | -53.4 | | 31.1 | 577.5 | 68.2 | 12.1 | 1.000007 |
| 68000.0 | 19.2 | -53.5 | | 30.4 | 577.4 | 72.4 | 11.9 | 1.000007 |
| 68500.0 | 18.7 | -53.5 | | 29.7 | 577.4 | 76.3 | 11.7 | 1.000007 |
| 69000.0 | 18.3 | -53.6 | | 29.0 | 577.3 | 80.3 | 10.9 | 1.000006 |
| 69500.0 | 17.9 | -53.6 | | 28.4 | 577.2 | 84.7 | 10.2 | 1.000006 |
| 70000.0 | 17.5 | -53.6 | | 27.7 | 577.2 | 89.6 | 9.2 | 1.000006 |
| 70500.0 | 17.1 | -53.7 | | 27.1 | 577.1 | 95.8 | 6.8 | 1.000006 |
| 71000.0 | 16.7 | -53.3 | | 26.4 | 577.7 | 108.4 | 4.6 | 1.000006 |
| 71500.0 | 16.3 | -52.8 | | 25.8 | 578.3 | 140.0 | 2.8 | 1.000006 |
| 72000.0 | 15.9 | -52.3 | | 25.1 | 579.0 | 216.3 | 2.9 | 1.000006 |
| 72500.0 | 15.6 | -51.8 | | 24.5 | 579.6 | 244.3 | 5.7 | 1.000005 |
| 73000.0 | 15.2 | -51.3 | | 23.9 | 580.3 | 253.0 | 8.8 | 1.000005 |
| 73500.0 | 14.9 | -50.8 | | 23.3 | 580.9 | 262.9 | 8.2 | 1.000005 |
| 74000.0 | 14.5 | -50.3 | | 22.7 | 581.5 | 274.0 | 7.9 | 1.000005 |
| 74500.0 | 14.2 | -49.8 | | 22.1 | 582.2 | 285.6 | 7.9 | 1.000005 |
| 75000.0 | 13.9 | -49.3 | | 21.6 | 582.8 | 321.2 | 6.4 | 1.000005 |
| 75500.0 | 13.5 | -48.8 | | 21.0 | 583.5 | 357.3 | 8.0 | 1.000005 |
| 76000.0 | 13.2 | -48.3 | | 20.5 | 584.1 | 16.7 | 11.4 | 1.000005 |
| 76500.0 | 12.9 | -47.8 | | 20.0 | 584.8 | 18.8 | 12.1 | 1.000004 |
| 77000.0 | 12.6 | -47.3 | | 19.5 | 585.4 | 19.5 | 12.3 | 1.000004 |
| 77500.0 | 12.3 | -47.7 | | 19.1 | 585.0 | 20.2 | 12.5 | 1.000004 |
| 78000.0 | 12.1 | -48.1 | | 18.7 | 585.5 | 6.5 | 10.3 | 1.000004 |
| 78500.0 | 11.8 | -48.5 | | 18.3 | 584.0 | 340.3 | 8.7 | 1.000004 |
| 79000.0 | 11.5 | -48.4 | | 17.9 | 584.1 | 311.6 | 9.4 | 1.000004 |
| 79500.0 | 11.3 | -48.0 | | 17.4 | 584.6 | 292.1 | 13.0 | 1.000004 |
| 80000.0 | 11.0 | -47.6 | | 17.0 | 585.1 | 262.3 | 17.8 | 1.000004 |
| 80500.0 | 10.8 | -47.2 | | 16.6 | 585.6 | 276.9 | 23.0 | 1.000004 |
| 81000.0 | 10.5 | -46.8 | | 16.2 | 586.1 | 274.0 | 27.5 | 1.000004 |
| 81500.0 | 10.3 | -46.5 | | 15.8 | 586.6 | 273.2 | 29.7 | 1.000004 |
| 82000.0 | 10.1 | -46.1 | | 15.4 | 587.0 | 272.5 | 31.9 | 1.000003 |
| 82500.0 | 9.8 | -45.8 | | 15.1 | 587.5 | 271.9 | 34.2 | 1.000003 |
| 83000.0 | 9.6 | -45.4 | | 14.7 | 587.9 | 271.4 | 36.4 | 1.000003 |

STATION ALTITUDE 3989.00 FEET MSL
 27 FEB. 61
 ASCENSION, NO. 138

UPPER AIR DATA
 0500020136
 WHITE SANDS
 TABLE 5 cont'

GEODETIC COORDINATES
 32.40043 LAT NEG
 106.37033 LONG NEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 103500.0 | 9.4 | -45.1 | | 14.4 | 548.3 | 270.9 | 36.2 | 1.000003 |
| 104000.0 | 9.2 | -44.8 | | 14.0 | 548.7 | 270.4 | 35.7 | 1.000003 |
| 104500.0 | 9.0 | -44.5 | | 13.7 | 549.1 | 269.8 | 35.2 | 1.000003 |
| 105000.0 | 8.8 | -44.1 | | 13.4 | 549.5 | 269.3 | 34.7 | 1.000003 |
| 105500.0 | 8.6 | -43.8 | | 13.0 | 549.0 | | | 1.000003 |
| 106000.0 | 8.4 | -43.5 | | 12.7 | 549.4 | | | 1.000003 |
| 106500.0 | 8.2 | -43.2 | | 12.4 | 549.8 | | | 1.000003 |
| 107000.0 | 8.0 | -42.9 | | 12.1 | 549.2 | | | 1.000003 |
| 107500.0 | 7.9 | -42.5 | | 11.9 | 549.6 | | | 1.000003 |
| 108000.0 | 7.7 | -42.2 | | 11.6 | 549.0 | | | 1.000003 |
| 108500.0 | 7.5 | -41.9 | | 11.3 | 549.4 | | | 1.000003 |

STATION ALTITUDE 3989.00 FEET MSL
 27 FEB. 81 0950 HRS MST
 ASCENSION NO. 138

MANDATORY LEVELS
 0580020138
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 6

| PRESSURE GEOPOTENTIAL MILLIBARS | FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUMID. PERCENT | WIND DATA | |
|------------------------------------|---------|--|------------------------|---------------------------|----------------|
| | | | | DIRECTION DEGREES (TN) | SPEED KNOTS |
| 850.0 | 4910. | 7.6 | 48. | 24.7 | 1.1 |
| 800.0 | 6551. | 5.4 | 79. | 39.0 | 32.1 |
| 750.0 | 8274. | 2.9 | 88. | 218.8 | 44.8 |
| 700.0 | 10105. | .9 | 93. | 219.5 | 39.7 |
| 650.0 | 12055. | -1.4 | 92. | 219.0 | 46.1 |
| 600.0 | 14138. | -4.8 | 91. | 220.7 | 51.0 |
| 550.0 | 16372. | -8.3 | 87. | 218.5 | 61.6 |
| 500.0 | 18785. | -12.0 | 83. | 222.1 | 61.6 |
| 450.0 | 21406. | -17.1 | 77. | 225.0 | 65.1 |
| 400.0 | 24273. | -23.0 | 72. | 221.0 | 69.0 |
| 350.0 | 27438. | -30.3 | 65. | 218.5 | 67.8 |
| 300.0 | 30974. | -38.7 | 57. | 218.6 | 106.2 |
| 250.0 | 34989. | -49.2 | | 222.6 | 134.5 |
| 200.0 | 39663. | -58.9 | | 9999.0 | 9999.0XX |
| 175.0 | 42425. | -57.4 | | 9999.0 | 9999.0XX |
| 150.0 | 45619. | -58.4 | | 9999.0 | 9999.0XX |
| 125.0 | 49337. | -63.5 | | 9999.0 | 9999.0XX |
| 100.0 | 53782. | -67.2 | | 9999.0 | 9999.0XX |
| 80.0 | 58189. | -67.8 | | 9999.0 | 9999.0XX |
| 70.0 | 60847. | -66.0 | | 9999.0 | 9999.0XX |
| 60.0 | 63948. | -63.2 | | 9999.0 | 9999.0XX |
| 50.0 | 67648. | -62.9 | | 50.3 | 16.2 |
| 40.0 | 72216. | -57.4 | | 28.2 | 20.6 |
| 30.0 | 78210. | -56.4 | | 80.8 | 23.5 |
| 25.0 | 82020. | -55.1 | | 84.9 | 14.1 |
| 20.0 | 86714. | -53.4 | | 64.7 | 12.3 |
| 15.0 | 92800. | -51.0 | | 257.0 | 8.5 |
| 10.0 | 101564. | -46.0 | | 272.4 | 32.2 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

SIGNIFICANT LEVEL DATA

058000.0033
S M R

TABLE 7

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 81 0900 HRS MSI
ASCENSION NO. 33

| PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|--|----------------|------------------------|----------------------|
| | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 880.8 | 11.8 | 9.4 | 25.0 |
| 670.2 | 11.9 | 4.9 | 52.0 |
| 850.0 | 10.8 | 3.6 | 61.0 |
| 826.6 | 8.9 | 2.3 | 63.0 |
| 751.0 | 3.1 | 2.2 | 94.0 |
| 700.0 | .7 | -.2 | 94.0 |
| 669.2 | .3 | -.5 | 94.0 |
| 541.6 | -8.3 | -9.6 | 90.0 |
| 500.0 | -11.8 | -13.7 | 66.0 |
| 448.2 | -16.8 | -18.8 | 84.0 |
| 400.0 | -22.5 | -26.1 | 72.0 |
| 341.0 | -31.3 | -36.0 | 63.0 |
| 300.0 | -38.4 | -43.4 | 59.0 |
| 287.6 | -41.1 | -46.7 | 54.0 |
| 269.6 | -44.8 | -50.5 | 52.0 |
| 250.0 | -49.8 | | |
| 215.6 | -57.3 | | |
| 200.0 | -59.0 | | |
| 195.8 | -57.6 | | |
| 181.8 | -58.3 | | |
| 168.4 | -56.6 | | |
| 150.0 | -57.9 | | |
| 138.8 | -59.5 | | |
| 119.8 | -65.0 | | |
| 100.0 | -67.8 | | |
| 80.4 | -70.3 | | |
| 74.2 | -65.4 | | |
| 70.0 | -65.0 | | |
| 62.4 | -61.7 | | |
| 56.8 | -63.7 | | |
| 54.0 | -60.8 | | |
| 51.4 | -62.5 | | |
| 50.0 | -61.3 | | |
| 30.0 | -56.2 | | |
| 20.0 | -53.3 | | |
| 16.0 | -52.8 | | |
| 13.4 | -49.5 | | |
| 12.6 | -48.3 | | |
| 11.2 | -47.7 | | |
| 10.0 | -46.8 | | |

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA

0580000033
 S M R

TABLE 7 cont'

STATION ALTITUDE 3997.30 FEET MSL
 27 FEB. 61 0900 HRS MSL
 ASCENSION NO. 33

| PRESSURE | GEOMETRIC ALTITUDE | TEMPERATURE AIR | DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT |
|-----------|-----------------------|--------------------|--------------------------------|----------------------|
| MILLIBARS | MSL FEET | | | |
| 7.0 | 110075.9 | -41.7 | | |
| 5.0 | 117697.9 | -38.5 | | |

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 81 0400 HRS MST
ASCENSION, NO. 33

UPPER AIR DATA
0580060033
S M R

GEODETIC COORDINATES
32.48034 LAT 11EG
106.42307 LON 11EG

TABLE 8

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND KNOTS | WIND DATA DIRECTION (TN) DEGREES | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------------|----------------------|-------------------------------|----------------------------|--|----------------|---------------------------|
| 3997.3 | 980.8 | 11.8 | 9.4 | 85.0 | 1071.4 | 659.3 | 180.0 | 1.0 | 1.000294 |
| 4000.0 | 880.7 | 11.8 | 9.3 | 84.8 | 1071.3 | 659.3 | 180.2 | 1.0 | 1.000294 |
| 4500.0 | 864.9 | 11.6 | 9.5 | 61.7 | 1054.1 | 658.6 | 203.0 | .5 | 1.000274 |
| 5000.0 | 849.2 | 10.7 | 3.5 | 61.1 | 1038.5 | 657.6 | 311.2 | 1.3 | 1.000268 |
| 5500.0 | 833.8 | 9.5 | 2.7 | 62.4 | 1024.3 | 656.1 | 320.3 | 2.3 | 1.000263 |
| 6000.0 | 818.6 | 8.3 | 2.4 | 66.1 | 1009.8 | 654.7 | 322.5 | 3.1 | 1.000260 |
| 6500.0 | 803.6 | 7.2 | 2.5 | 72.1 | 995.1 | 653.4 | 320.7 | 3.4 | 1.000257 |
| 7000.0 | 788.8 | 6.1 | 2.6 | 78.1 | 980.7 | 652.1 | 314.7 | 2.6 | 1.000254 |
| 7500.0 | 774.3 | 4.9 | 2.5 | 84.1 | 966.5 | 650.8 | 267.7 | .9 | 1.000251 |
| 8000.0 | 760.1 | 3.8 | 2.4 | 90.1 | 952.5 | 649.5 | 205.7 | 3.6 | 1.000248 |
| 8500.0 | 746.0 | 2.9 | 2.0 | 94.0 | 938.2 | 648.4 | 202.3 | 7.5 | 1.000244 |
| 9000.0 | 732.1 | 2.2 | 1.4 | 94.0 | 922.9 | 647.6 | 207.5 | 12.4 | 1.000239 |
| 9500.0 | 718.5 | 1.6 | .7 | 94.0 | 907.9 | 646.8 | 212.4 | 17.9 | 1.000235 |
| 10000.0 | 705.1 | .9 | .1 | 94.0 | 893.1 | 646.0 | 216.4 | 23.3 | 1.000230 |
| 10500.0 | 691.9 | .6 | -.3 | 94.0 | 877.6 | 645.0 | 219.9 | 28.5 | 1.000226 |
| 11000.0 | 678.9 | .4 | -.4 | 94.0 | 861.6 | 645.4 | 223.1 | 32.7 | 1.000222 |
| 11500.0 | 666.1 | .1 | -.7 | 93.9 | 846.4 | 645.1 | 226.2 | 36.0 | 1.000218 |
| 12000.0 | 653.4 | -.7 | -1.6 | 93.5 | 832.8 | 644.1 | 226.4 | 38.0 | 1.000213 |
| 12500.0 | 641.0 | -1.5 | -2.4 | 93.2 | 819.4 | 643.1 | 224.7 | 39.0 | 1.000209 |
| 13000.0 | 628.8 | -2.2 | -3.2 | 92.8 | 806.2 | 642.2 | 223.5 | 39.9 | 1.000204 |
| 13500.0 | 616.8 | -3.0 | -4.1 | 92.5 | 793.2 | 641.2 | 222.4 | 40.7 | 1.000200 |
| 14000.0 | 605.0 | -3.8 | -4.9 | 92.1 | 780.4 | 640.2 | 223.6 | 41.1 | 1.000196 |
| 14500.0 | 593.5 | -4.6 | -5.7 | 91.7 | 767.9 | 639.3 | 225.6 | 41.4 | 1.000192 |
| 15000.0 | 582.2 | -5.4 | -6.5 | 91.4 | 755.5 | 638.3 | 226.1 | 42.0 | 1.000188 |
| 15500.0 | 571.1 | -6.1 | -7.4 | 91.0 | 743.4 | 637.3 | 226.3 | 42.8 | 1.000184 |
| 16000.0 | 560.2 | -6.9 | -8.2 | 90.6 | 731.4 | 636.4 | 226.4 | 43.8 | 1.000181 |
| 16500.0 | 549.5 | -7.7 | -9.0 | 90.3 | 719.7 | 635.4 | 226.5 | 44.9 | 1.000177 |
| 17000.0 | 539.0 | -8.5 | -9.9 | 89.8 | 708.1 | 634.4 | 226.7 | 45.7 | 1.000173 |
| 17500.0 | 528.5 | -9.4 | -10.9 | 88.8 | 696.6 | 633.3 | 227.0 | 46.2 | 1.000170 |
| 18000.0 | 518.2 | -10.2 | -11.9 | 87.8 | 685.3 | 632.3 | 227.4 | 46.4 | 1.000166 |
| 18500.0 | 508.1 | -11.1 | -12.9 | 86.8 | 674.3 | 631.2 | 227.8 | 46.4 | 1.000163 |
| 19000.0 | 498.1 | -12.0 | -13.8 | 85.9 | 663.3 | 630.1 | 228.2 | 46.3 | 1.000159 |
| 19500.0 | 488.2 | -12.9 | -14.8 | 85.6 | 652.5 | 629.0 | 228.7 | 46.0 | 1.000156 |
| 20000.0 | 478.6 | -13.8 | -15.7 | 85.2 | 641.9 | 627.8 | 228.9 | 46.2 | 1.000153 |
| 20500.0 | 469.1 | -14.7 | -16.7 | 84.8 | 631.5 | 626.7 | 228.9 | 46.8 | 1.000150 |
| 21000.0 | 459.8 | -15.6 | -17.6 | 84.5 | 621.2 | 625.6 | 229.1 | 47.5 | 1.000147 |
| 21500.0 | 450.7 | -16.5 | -18.6 | 84.1 | 611.1 | 624.4 | 229.4 | 48.4 | 1.000144 |
| 22000.0 | 441.6 | -17.5 | -19.8 | 82.4 | 601.2 | 623.2 | 230.5 | 48.7 | 1.000141 |
| 22500.0 | 432.6 | -18.6 | -21.1 | 80.3 | 591.4 | 621.9 | 232.0 | 48.7 | 1.000138 |
| 23000.0 | 423.9 | -19.6 | -22.4 | 78.1 | 581.9 | 620.3 | 231.6 | 48.2 | 1.000136 |

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 61 0900 HRS MST
ASCENSION NO. 33

UPPER AIR DATA
0580060035
S M R

GEODETTIC COORDINATES
12.48034 LAT DEG
106.42307 LONG DEG

TABLE 8 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND METERS PER SECOND | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|-------------------------------|---|--|----------------|---------------------------|
| | | | | | | | | |
| 23500.0 | 415.3 | -20.6 | 76.0 | 572.4 | 619.3 | 230.0 | 47.3 | 1.000133 |
| 24000.0 | 400.9 | -21.6 | 73.8 | 563.2 | 618.1 | 227.5 | 46.4 | 1.000130 |
| 24500.0 | 396.6 | -22.7 | 71.8 | 554.1 | 616.8 | 223.3 | 45.8 | 1.000128 |
| 25000.0 | 390.3 | -23.9 | 70.6 | 545.1 | 615.3 | 221.3 | 47.1 | 1.000125 |
| 25500.0 | 382.2 | -25.0 | 69.4 | 536.3 | 613.8 | 220.6 | 49.5 | 1.000123 |
| 26000.0 | 374.2 | -26.2 | 68.2 | 527.6 | 612.4 | 220.7 | 52.1 | 1.000121 |
| 26500.0 | 366.4 | -27.3 | 67.1 | 519.1 | 610.9 | 221.6 | 54.9 | 1.000118 |
| 27000.0 | 358.8 | -28.5 | 65.9 | 510.7 | 609.5 | 221.8 | 56.8 | 1.000116 |
| 27500.0 | 351.3 | -29.7 | 64.7 | 502.5 | 608.0 | 221.2 | 57.1 | 1.000114 |
| 28000.0 | 344.0 | -30.8 | 63.5 | 494.4 | 606.6 | 220.7 | 57.8 | 1.000112 |
| 28500.0 | 336.7 | -32.0 | 62.6 | 486.3 | 605.1 | 220.2 | 59.5 | 1.000110 |
| 29000.0 | 329.4 | -33.2 | 61.9 | 478.2 | 603.5 | 219.6 | 61.0 | 1.000108 |
| 29500.0 | 322.4 | -34.4 | 61.2 | 470.3 | 602.0 | 219.7 | 61.9 | 1.000106 |
| 30000.0 | 315.4 | -35.6 | 60.6 | 462.5 | 600.5 | 219.6 | 62.6 | 1.000104 |
| 30500.0 | 308.6 | -36.8 | 59.9 | 454.9 | 598.9 | 219.7 | 61.8 | 1.000102 |
| 31000.0 | 302.0 | -38.0 | 59.2 | 447.4 | 597.4 | 219.7 | 61.0 | 1.000101 |
| 31500.0 | 295.4 | -39.4 | 57.2 | 440.2 | 595.7 | 219.7 | 62.3 | 1.000099 |
| 32000.0 | 288.9 | -40.8 | 54.5 | 433.1 | 593.9 | 219.7 | 63.5 | 1.000097 |
| 32500.0 | 282.5 | -42.1 | 53.4 | 425.9 | 592.2 | 219.6 | 64.5 | 1.000095 |
| 33000.0 | 276.2 | -43.4 | 52.7 | 418.8 | 590.5 | 219.9 | 65.3 | 1.000094 |
| 33500.0 | 270.1 | -44.7 | 52.1 | 411.8 | 588.9 | 220.3 | 67.3 | 1.000092 |
| 34000.0 | 263.9 | -46.2 | 37.4** | 405.1 | 586.9 | 221.5 | 71.1 | 1.000090 |
| 34500.0 | 257.9 | -47.7 | 21.6** | 398.6 | 584.9 | 222.5 | 75.6 | 1.000089 |
| 35000.0 | 252.1 | -49.2 | 5.8** | 392.2 | 582.9 | 223.7 | 82.2 | 1.000087 |
| 35500.0 | 246.3 | -50.6 | | 385.4 | 581.2 | 224.6 | 87.7 | 1.000086 |
| 36000.0 | 240.5 | -51.8 | | 378.5 | 579.7 | 225.4 | 89.2 | 1.000084 |
| 36500.0 | 234.9 | -53.0 | | 371.7 | 578.1 | 226.1 | 90.4 | 1.000083 |
| 37000.0 | 229.4 | -54.1 | | 365.0 | 576.5 | 226.5 | 90.2 | 1.000081 |
| 37500.0 | 224.1 | -55.3 | | 358.4 | 575.0 | 226.8 | 90.1 | 1.000080 |
| 38000.0 | 218.9 | -56.5 | | 352.0 | 573.4 | 226.7 | 90.2 | 1.000078 |
| 38500.0 | 213.7 | -57.5 | | 345.2 | 572.1 | 226.8 | 90.2 | 1.000077 |
| 39000.0 | 208.6 | -58.0 | | 337.9 | 571.4 | 227.4 | 89.1 | 1.000075 |
| 39500.0 | 203.7 | -58.6 | | 330.7 | 570.7 | 228.1 | 88.1 | 1.000074 |
| 40000.0 | 198.8 | -58.6 | | 322.8 | 570.0 | 229.6 | 87.3 | 1.000072 |
| 40500.0 | 194.1 | -57.7 | | 315.8 | 571.9 | 231.7 | 86.3 | 1.000070 |
| 41000.0 | 189.5 | -57.9 | | 306.7 | 571.6 | 234.0 | 83.4 | 1.000068 |
| 41500.0 | 185.0 | -58.1 | | 299.7 | 571.3 | 236.5 | 80.8 | 1.000067 |
| 42000.0 | 180.6 | -58.1 | | 292.6 | 571.2 | 239.4 | 78.1 | 1.000065 |
| 42500.0 | 176.3 | -57.6 | | 284.9 | 571.9 | 242.6 | 75.7 | 1.000063 |
| 43000.0 | 172.1 | -57.1 | | 277.5 | 572.7 | 244.6 | 74.8 | 1.000062 |

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3977.30 FEET MSL
27 FEB. 61 0900 HRS MST
ASCENSION NO. 33

UPPER AIR DATA
0580060032
S M P

GEODETIC COORDINATES
32.48034 LAT 1EG
106.42507 LONG 1EG

TABLE 8 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND M/SEC | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|-----------------------------|----------------|---------------------------|
| | | | | | | DIRECTION (DEGREES TRUE) | SPEED KNOTS | |
| 43500.0 | 160.0 | -56.6 | | 270.3 | 573.3 | 240.0 | 74.1 | 1.000000 |
| 44000.0 | 164.0 | -56.9 | | 264.2 | 572.9 | 247.0 | 72.5 | 1.000059 |
| 44500.0 | 160.1 | -57.2 | | 258.3 | 572.5 | 248.5 | 70.8 | 1.000058 |
| 45000.0 | 156.4 | -57.4 | | 252.5 | 572.2 | 249.5 | 69.0 | 1.000056 |
| 45500.0 | 152.6 | -57.7 | | 246.8 | 571.8 | 250.4 | 67.1 | 1.000055 |
| 46000.0 | 149.0 | -58.0 | | 241.3 | 571.4 | 251.5 | 65.1 | 1.000054 |
| 46500.0 | 145.5 | -58.5 | | 236.1 | 570.7 | 251.0 | 62.9 | 1.000053 |
| 47000.0 | 142.0 | -59.0 | | 231.0 | 570.1 | 251.4 | 60.7 | 1.000051 |
| 47500.0 | 138.6 | -59.6 | | 226.1 | 569.4 | 250.7 | 57.4 | 1.000050 |
| 48000.0 | 135.2 | -60.5 | | 221.5 | 568.1 | 249.9 | 54.0 | 1.000049 |
| 48500.0 | 132.0 | -61.4 | | 217.1 | 566.9 | 249.1 | 51.9 | 1.000048 |
| 49000.0 | 128.8 | -62.3 | | 212.8 | 565.7 | 248.8 | 50.9 | 1.000047 |
| 49500.0 | 125.6 | -63.2 | | 208.5 | 564.5 | 249.0 | 50.1 | 1.000046 |
| 50000.0 | 122.6 | -64.1 | | 204.3 | 563.2 | 250.4 | 49.8 | 1.000046 |
| 50500.0 | 119.6 | -65.0 | | 200.2 | 562.0 | 251.5 | 49.5 | 1.000045 |
| 51000.0 | 116.7 | -65.4 | | 195.6 | 561.5 | 252.0 | 48.7 | 1.000044 |
| 51500.0 | 113.8 | -65.8 | | 191.2 | 561.0 | 253.0 | 47.8 | 1.000043 |
| 52000.0 | 111.0 | -66.2 | | 186.8 | 560.5 | 253.4 | 47.1 | 1.000042 |
| 52500.0 | 108.2 | -66.6 | | 182.5 | 559.9 | 253.5 | 47.7 | 1.000041 |
| 53000.0 | 105.6 | -67.0 | | 178.3 | 559.4 | 253.2 | 48.2 | 1.000040 |
| 53500.0 | 102.9 | -67.4 | | 174.3 | 558.9 | 253.3 | 48.4 | 1.000039 |
| 54000.0 | 100.4 | -67.7 | | 170.3 | 558.4 | 253.4 | 48.2 | 1.000038 |
| 54500.0 | 97.9 | -68.0 | | 166.3 | 557.9 | 254.7 | 48.0 | 1.000037 |
| 55000.0 | 95.4 | -68.3 | | 162.3 | 557.5 | 250.2 | 46.3 | 1.000036 |
| 55500.0 | 93.1 | -68.6 | | 158.5 | 557.1 | 257.0 | 44.6 | 1.000035 |
| 56000.0 | 90.7 | -68.9 | | 154.8 | 556.8 | 259.5 | 43.5 | 1.000034 |
| 56500.0 | 88.5 | -69.2 | | 151.1 | 556.4 | 259.0 | 43.4 | 1.000034 |
| 57000.0 | 86.2 | -69.5 | | 147.5 | 556.0 | 259.5 | 43.3 | 1.000033 |
| 57500.0 | 84.1 | -69.8 | | 144.0 | 555.6 | 259.0 | 44.5 | 1.000032 |
| 58000.0 | 82.0 | -70.1 | | 140.6 | 555.2 | 258.8 | 45.8 | 1.000031 |
| 58500.0 | 79.9 | -70.4 | | 137.0 | 555.3 | 258.6 | 45.8 | 1.000030 |
| 59000.0 | 77.9 | -70.7 | | 132.6 | 555.4 | 258.4 | 44.7 | 1.000029 |
| 59500.0 | 76.0 | -70.9 | | 128.4 | 555.5 | 260.4 | 43.5 | 1.000028 |
| 60000.0 | 74.1 | -71.1 | | 124.3 | 555.5 | 262.2 | 40.1 | 1.000027 |
| 60500.0 | 72.3 | -71.2 | | 121.1 | 555.4 | 264.3 | 36.6 | 1.000026 |
| 61000.0 | 70.5 | -71.3 | | 118.1 | 555.3 | 266.5 | 33.3 | 1.000025 |
| 61500.0 | 68.8 | -71.4 | | 114.9 | 555.2 | 269.2 | 30.1 | 1.000024 |
| 62000.0 | 67.1 | -71.5 | | 111.7 | 555.1 | 272.5 | 26.9 | 1.000023 |
| 62500.0 | 65.5 | -71.6 | | 108.6 | 555.0 | 275.5 | 23.8 | 1.000022 |
| 63000.0 | 63.9 | -71.7 | | 105.6 | 554.9 | | 20.4 | 1.000021 |

UPPER AIR DATA
0580060033
S M R
TABLE 8 cont'

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 61 0900 HRS MST
ASCENSION: NO. 33

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CM ³ | SOUND SPEED KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|-------------------------------|-------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 63500.0 | 62.3 | -61.7 | | 102.7 | 565.5 | 279.7 | 17.0 | 1.000023 |
| 64000.0 | 60.8 | -62.2 | | 100.5 | 565.8 | 285.6 | 13.7 | 1.000022 |
| 64500.0 | 59.4 | -62.8 | | 98.3 | 565.1 | 294.5 | 10.4 | 1.000022 |
| 65000.0 | 57.9 | -63.3 | | 96.1 | 564.4 | 310.7 | 7.6 | 1.000021 |
| 65500.0 | 56.5 | -63.4 | | 93.9 | 564.2 | 325.3 | 5.6 | 1.000021 |
| 66000.0 | 55.1 | -62.0 | | 91.0 | 566.1 | 343.1 | 4.0 | 1.000020 |
| 66500.0 | 53.8 | -60.9 | | 88.3 | 567.5 | 11.9 | 3.1 | 1.000020 |
| 67000.0 | 52.5 | -61.8 | | 86.5 | 566.4 | 30.2 | 2.3 | 1.000019 |
| 67500.0 | 51.2 | -62.4 | | 84.7 | 565.6 | 62.4 | 1.8 | 1.000019 |
| 68000.0 | 50.0 | -61.3 | | 82.2 | 567.0 | 119.1 | 1.3 | 1.000018 |
| 68500.0 | 48.8 | -61.1 | | 80.2 | 567.4 | 185.2 | 2.4 | 1.000018 |
| 69000.0 | 47.7 | -60.8 | | 78.2 | 567.7 | 200.4 | 4.5 | 1.000017 |
| 69500.0 | 46.5 | -60.6 | | 76.2 | 568.0 | 207.3 | 6.1 | 1.000017 |
| 70000.0 | 45.4 | -60.3 | | 74.3 | 568.3 | 211.5 | 7.7 | 1.000017 |
| 70500.0 | 44.3 | -60.1 | | 72.5 | 568.6 | 214.3 | 9.1 | 1.000016 |
| 71000.0 | 43.3 | -59.9 | | 70.7 | 569.0 | 217.4 | 8.1 | 1.000016 |
| 71500.0 | 42.2 | -59.6 | | 68.9 | 569.3 | 221.4 | 7.1 | 1.000015 |
| 72000.0 | 41.2 | -59.4 | | 67.2 | 569.6 | 227.1 | 5.7 | 1.000015 |
| 72500.0 | 40.3 | -59.1 | | 65.5 | 569.9 | 240.0 | 3.5 | 1.000015 |
| 73000.0 | 39.3 | -58.9 | | 63.9 | 570.2 | 283.4 | 2.0 | 1.000014 |
| 73500.0 | 38.4 | -58.7 | | 62.3 | 570.6 | 332.6 | 2.2 | 1.000014 |
| 74000.0 | 37.5 | -58.4 | | 60.8 | 570.9 | 354.3 | 2.9 | 1.000014 |
| 74500.0 | 36.6 | -58.2 | | 59.2 | 571.2 | 6.3 | 3.9 | 1.000013 |
| 75000.0 | 35.7 | -57.9 | | 57.6 | 571.5 | 11.9 | 3.7 | 1.000013 |
| 75500.0 | 34.8 | -57.7 | | 56.3 | 571.8 | 18.4 | 3.0 | 1.000013 |
| 76000.0 | 34.0 | -57.5 | | 54.9 | 572.2 | 28.1 | 2.5 | 1.000012 |
| 76500.0 | 33.2 | -57.2 | | 53.6 | 572.5 | 47.5 | 2.0 | 1.000012 |
| 77000.0 | 32.4 | -57.0 | | 52.2 | 572.8 | 73.0 | 1.9 | 1.000012 |
| 77500.0 | 31.6 | -56.7 | | 50.9 | 573.1 | 97.1 | 2.2 | 1.000011 |
| 78000.0 | 30.9 | -56.5 | | 49.7 | 573.4 | 111.0 | 3.4 | 1.000011 |
| 78500.0 | 30.2 | -56.3 | | 48.4 | 573.8 | 117.1 | 4.8 | 1.000011 |
| 79000.0 | 29.4 | -56.1 | | 47.3 | 574.0 | 120.5 | 6.2 | 1.000011 |
| 79500.0 | 28.8 | -55.9 | | 46.1 | 574.2 | 113.6 | 7.2 | 1.000010 |
| 80000.0 | 28.1 | -55.7 | | 45.0 | 574.4 | 106.4 | 8.2 | 1.000010 |
| 80500.0 | 27.4 | -55.6 | | 43.9 | 574.7 | 100.7 | 9.4 | 1.000010 |
| 81000.0 | 26.8 | -55.4 | | 42.9 | 574.9 | 98.0 | 9.0 | 1.000010 |
| 81500.0 | 26.2 | -55.2 | | 41.8 | 575.1 | 97.9 | 8.1 | 1.000009 |
| 82000.0 | 25.6 | -55.1 | | 40.8 | 575.3 | 96.8 | 7.2 | 1.000009 |
| 82500.0 | 25.0 | -54.9 | | 39.8 | 575.6 | 108.3 | 5.8 | 1.000009 |
| 83000.0 | 24.4 | -54.7 | | 38.9 | 575.8 | 136.0 | 4.8 | 1.000009 |

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 81
ASCENSION NO. 33

UPPER AIR DATA
0500000033
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 8 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|----------------------------|----------------|---------------------------|
| | | | | | | DIRECTION (DEGREES(TN)) | SPEED KNOTS | |
| 83500.0 | 23.8 | -54.5 | | 37.9 | 576.0 | 167.3 | 5.2 | 1.000008 |
| 84000.0 | 23.3 | -54.4 | | 37.0 | 576.2 | 185.0 | 6.3 | 1.000008 |
| 84500.0 | 22.7 | -54.2 | | 36.1 | 576.4 | 194.5 | 7.4 | 1.000008 |
| 85000.0 | 22.2 | -54.0 | | 35.3 | 576.7 | 201.4 | 8.7 | 1.000008 |
| 85500.0 | 21.7 | -53.9 | | 34.4 | 576.9 | 204.7 | 9.6 | 1.000008 |
| 86000.0 | 21.2 | -53.7 | | 33.6 | 577.1 | 205.0 | 9.9 | 1.000007 |
| 86500.0 | 20.7 | -53.5 | | 32.8 | 577.3 | 206.8 | 10.3 | 1.000007 |
| 87000.0 | 20.2 | -53.4 | | 32.0 | 577.6 | 206.7 | 10.3 | 1.000007 |
| 87500.0 | 19.7 | -53.3 | | 31.2 | 577.7 | 200.4 | 8.5 | 1.000007 |
| 88000.0 | 19.3 | -53.2 | | 30.5 | 577.8 | 190.9 | 6.9 | 1.000007 |
| 88500.0 | 18.8 | -53.2 | | 29.8 | 577.8 | 176.4 | 5.6 | 1.000007 |
| 89000.0 | 18.4 | -53.1 | | 29.1 | 577.9 | 163.9 | 6.1 | 1.000006 |
| 89500.0 | 17.9 | -53.1 | | 28.4 | 578.0 | 150.0 | 7.3 | 1.000006 |
| 90000.0 | 17.5 | -53.0 | | 27.7 | 578.0 | 150.3 | 8.6 | 1.000006 |
| 90500.0 | 17.1 | -53.0 | | 27.1 | 578.1 | 149.9 | 8.9 | 1.000006 |
| 91000.0 | 16.7 | -52.9 | | 26.5 | 578.2 | 157.3 | 7.7 | 1.000006 |
| 91500.0 | 16.3 | -52.8 | | 25.8 | 578.2 | 167.2 | 6.7 | 1.000006 |
| 92000.0 | 16.0 | -52.8 | | 25.2 | 578.4 | 180.2 | 5.9 | 1.000006 |
| 92500.0 | 15.6 | -52.3 | | 24.6 | 578.9 | 207.2 | 4.6 | 1.000005 |
| 93000.0 | 15.2 | -51.9 | | 24.0 | 579.5 | 242.1 | 4.7 | 1.000005 |
| 93500.0 | 14.9 | -51.5 | | 23.4 | 580.1 | 266.8 | 6.3 | 1.000005 |
| 94000.0 | 14.5 | -51.0 | | 22.8 | 580.6 | 272.7 | 8.0 | 1.000005 |
| 94500.0 | 14.2 | -50.6 | | 22.2 | 581.2 | 270.8 | 9.5 | 1.000005 |
| 95000.0 | 13.9 | -50.2 | | 21.7 | 581.7 | 269.5 | 11.0 | 1.000005 |
| 95500.0 | 13.6 | -49.7 | | 21.2 | 582.3 | 268.5 | 12.4 | 1.000005 |
| 96000.0 | 13.3 | -49.3 | | 20.6 | 582.9 | 268.3 | 13.8 | 1.000005 |
| 96500.0 | 13.0 | -48.8 | | 20.1 | 583.5 | 268.1 | 15.1 | 1.000004 |
| 97000.0 | 12.7 | -48.4 | | 19.6 | 584.0 | 267.9 | 16.4 | 1.000004 |
| 97500.0 | 12.4 | -48.5 | | 19.2 | 583.9 | 269.5 | 17.3 | 1.000004 |
| 98000.0 | 12.1 | -48.8 | | 18.8 | 583.5 | 271.9 | 18.1 | 1.000004 |
| 98500.0 | 11.8 | -49.1 | | 18.4 | 583.2 | 274.1 | 18.9 | 1.000004 |
| 99000.0 | 11.6 | -49.3 | | 18.0 | 582.8 | 275.0 | 19.7 | 1.000004 |
| 99500.0 | 11.3 | -49.6 | | 17.6 | 582.5 | 274.5 | 21.0 | 1.000004 |
| 100000.0 | 11.0 | -49.3 | | 17.2 | 582.9 | 273.5 | 22.2 | 1.000004 |
| 100500.0 | 10.8 | -48.7 | | 16.7 | 583.0 | 272.6 | 23.5 | 1.000004 |
| 101000.0 | 10.5 | -48.1 | | 16.3 | 584.4 | 271.2 | 24.0 | 1.000004 |
| 101500.0 | 10.3 | -47.6 | | 15.9 | 585.1 | 269.6 | 24.3 | 1.000004 |
| 102000.0 | 10.1 | -47.0 | | 15.5 | 585.9 | 268.0 | 24.6 | 1.000003 |
| 102500.0 | 9.8 | -46.6 | | 15.1 | 586.4 | 267.4 | 24.6 | 1.000003 |
| 103000.0 | 9.6 | -46.3 | | 14.8 | 586.8 | 270.3 | 23.3 | 1.000003 |

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

UPPER AIR DATA
0580000033
S M R

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 61 0900 HRS MST
ASCENSION NO. 33

TABLE 8 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CELSIUS | REL. HUM. PERCENT | WIND DIRECTION DEGREES (TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|----------------------|-----------------------------------|------------------------|---------------------------|
| 103500.0 | 9.4 | -45.9 | 14.4 | 547.2 | 273.5 | 1.000003 |
| 104000.0 | 9.2 | -45.6 | 14.1 | 547.7 | 277.1 | 1.000003 |
| 104500.0 | 9.0 | -45.3 | 13.8 | 548.1 | 279.1 | 1.000003 |
| 105000.0 | 8.8 | -45.0 | 13.4 | 548.5 | 280.1 | 1.000003 |
| 105500.0 | 8.6 | -44.6 | 13.1 | 548.9 | 281.1 | 1.000003 |
| 106000.0 | 8.4 | -44.3 | 12.8 | 549.3 | 281.3 | 1.000003 |
| 106500.0 | 8.2 | -44.0 | 12.5 | 549.7 | 276.2 | 1.000003 |
| 107000.0 | 8.0 | -43.7 | 12.2 | 549.1 | 272.3 | 1.000003 |
| 107500.0 | 7.9 | -43.4 | 11.9 | 549.6 | 269.3 | 1.000003 |
| 108000.0 | 7.7 | -43.0 | 11.6 | 549.0 | 267.0 | 1.000003 |
| 108500.0 | 7.5 | -42.7 | 11.4 | 549.4 | 265.2 | 1.000003 |
| 109000.0 | 7.3 | -42.4 | 11.1 | 549.8 | 263.7 | 1.000002 |
| 109500.0 | 7.2 | -42.1 | 10.8 | 549.2 | 262.4 | 1.000002 |
| 110000.0 | 7.0 | -41.7 | 10.6 | 549.6 | 261.3 | 1.000002 |
| 110500.0 | 6.9 | -41.5 | 10.3 | 549.9 | 260.1 | 1.000002 |
| 111000.0 | 6.7 | -41.3 | 10.1 | 549.2 | 259.0 | 1.000002 |
| 111500.0 | 6.6 | -41.1 | 9.9 | 549.4 | 258.0 | 1.000002 |
| 112000.0 | 6.4 | -40.9 | 9.6 | 549.7 | 257.0 | 1.000002 |
| 112500.0 | 6.3 | -40.7 | 9.4 | 549.0 | 256.1 | 1.000002 |
| 113000.0 | 6.2 | -40.5 | 9.2 | 549.3 | 255.1 | 1.000002 |
| 113500.0 | 6.0 | -40.3 | 9.0 | 549.5 | 254.2 | 1.000002 |
| 114000.0 | 5.9 | -40.1 | 8.8 | 549.8 | 253.3 | 1.000002 |
| 114500.0 | 5.8 | -39.8 | 8.6 | 549.1 | 252.4 | 1.000002 |
| 115000.0 | 5.6 | -39.6 | 8.4 | 549.3 | 251.6 | 1.000002 |
| 115500.0 | 5.5 | -39.4 | 8.2 | 549.6 | | 1.000002 |
| 116000.0 | 5.4 | -39.2 | 8.0 | 549.9 | | 1.000002 |
| 116500.0 | 5.3 | -39.0 | 7.8 | 549.1 | | 1.000002 |
| 117000.0 | 5.2 | -38.8 | 7.7 | 549.4 | | 1.000002 |
| 117500.0 | 5.0 | -38.6 | 7.5 | 549.7 | | 1.000002 |

STATION ALTITUDE 3997.30 FEET MSL
27 FEB. 81
ASCENSION NO. 33

MANDATORY LEVELS
0580000033
S M R

GEODETIC COORDINATES
32.48034 LAT NEG
106.42307 LONG NEG

TABLE 9

| PRESSURE GEOPOTENTIAL MILLIBARS | FEET | TEMPERATURE | | REL. HUM. PERCENT | WIND DATA | |
|------------------------------------|---------|----------------|------------------------|----------------------|--------------------------|----------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4972. | 10.0 | 3.0 | 61. | 310.3 | 1.2 |
| 800.0 | 6020. | 6.9 | 2.5 | 74. | 320.4 | 3.5 |
| 750.0 | 8351. | 3.1 | 2.2 | 84. | 202.9 | 6.4 |
| 700.0 | 10181. | .7 | -2 | 94. | 217.9 | 25.2 |
| 650.0 | 12134. | -0.0 | -1.0 | 93. | 225.9 | 38.3 |
| 600.0 | 14222. | -4.1 | -5.2 | 92. | 224.5 | 41.2 |
| 550.0 | 16462. | -7.7 | -9.0 | 90. | 226.5 | 44.8 |
| 500.0 | 18879. | -11.0 | -13.7 | 86. | 228.1 | 46.3 |
| 450.0 | 21505. | -16.6 | -18.7 | 84. | 229.4 | 48.4 |
| 400.0 | 24378. | -22.5 | -26.1 | 72. | 224.1 | 45.9 |
| 350.0 | 27549. | -29.9 | -34.4 | 64. | 221.1 | 57.1 |
| 300.0 | 31090. | -38.4 | -43.4 | 59. | 219.7 | 61.4 |
| 250.0 | 35105. | -49.8 | | | 224.0 | 64.4 |
| 200.0 | 39781. | -59.0 | | | 229.4 | 67.5 |
| 175.0 | 42542. | -57.5 | | | 243.1 | 75.4 |
| 150.0 | 45742. | -57.9 | | | 251.1 | 65.8 |
| 125.0 | 49471. | -63.4 | | | 249.0 | 50.0 |
| 100.0 | 53914. | -67.8 | | | 253.3 | 48.1 |
| 80.0 | 58290. | -70.0 | | | 258.0 | 45.9 |
| 70.0 | 60940. | -65.0 | | | 264.8 | 32.5 |
| 60.0 | 64053. | -62.5 | | | 269.4 | 12.0 |
| 50.0 | 67747. | -61.3 | | | 112.8 | 1.3 |
| 40.0 | 72314. | -59.1 | | | 243.9 | 3.2 |
| 30.0 | 78272. | -56.2 | | | 117.7 | 5.0 |
| 25.0 | 82085. | -54.0 | | | 104.4 | 6.1 |
| 20.0 | 86782. | -53.3 | | | 205.1 | 9.7 |
| 15.0 | 92872. | -51.6 | | | 257.9 | 5.5 |
| 10.0 | 101598. | -46.8 | | | 267.8 | 24.7 |
| 7.0 | 109444. | -41.7 | | | 261.2 | 46.3 |
| 5.0 | 116979. | -38.5 | | | | |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES
32.89927 LAT DEG
106.40591 LONG DEG

SIGNIFICANT LEVEL DATA
0580290037
E-28

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 81 0950 HRS MST
ASCENSION NO. 37

TABLE 10

| PRESSURE | GEOMETRIC ALTITUDE | TEMPERATURE | | REL. HUM. PERCENT |
|----------|-----------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 081.5 | 3912.7 | 12.0 | 4.7 | 61.0 |
| 050.0 | 4912.8 | 11.1 | 3.4 | 59.0 |
| 737.8 | 8722.1 | .2 | -.6 | 94.0 |
| 724.0 | 9220.5 | .5 | -.2 | 95.0 |
| 700.0 | 10110.6 | .2 | -.6 | 94.0 |
| 616.2 | 13449.8 | -3.9 | -5.0 | 92.0 |
| 500.0 | 14793.1 | -12.4 | -14.0 | 88.0 |
| 432.5 | 22391.6 | -19.4 | -21.7 | 82.0 |
| 400.0 | 24288.1 | -23.4 | -26.9 | 73.0 |
| 300.0 | 30990.3 | -30.3 | -44.5 | 57.0 |
| 274.4 | 32989.1 | -43.7 | -49.2 | 54.0 |
| 250.0 | 35022.0 | -50.0 | | |
| 224.0 | 37350.7 | -56.7 | | |
| 207.9 | 38896.0 | -60.2 | | |
| 200.0 | 39697.3 | -57.4 | | |
| 172.2 | 42816.9 | -57.0 | | |
| 150.0 | 45685.4 | -58.8 | | |
| 117.4 | 50677.1 | -65.7 | | |
| 103.1 | 53293.8 | -63.6 | | |
| 100.0 | 53911.0 | -64.3 | | |
| 82.8 | 57677.4 | -60.1 | | |
| 79.8 | 58400.7 | -68.4 | | |
| 74.4 | 59809.7 | -63.7 | | |
| 70.0 | 61041.2 | -64.8 | | |
| 67.8 | 61682.2 | -66.4 | | |
| 63.4 | 63031.4 | -64.1 | | |
| 58.3 | 64724.4 | -64.8 | | |
| 56.2 | 65472.0 | -60.2 | | |
| 50.0 | 67868.2 | -62.4 | | |
| 36.8 | 74206.0 | -56.7 | | |
| 30.0 | 78494.7 | -56.1 | | |
| 20.0 | 87060.5 | -54.2 | | |
| 17.8 | 89539.0 | -53.4 | | |
| 15.8 | 92085.5 | -52.3 | | |

GEODETIC COORDINATES
32.89927 LAT DEG
106.40591 LONG DEG

UPPER AIR DATA
0500290037
E-20

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 61 0950 HRS MST
ASCENSION NO. 37

TABLE 11

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES CELSIUS | REL. HUMID. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION (TH) SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|------------------------------------|------------------------|------------------------------|----------------------------|---|---------------------------|
| 3912.7 | 881.5 | 12.0 | 61.0 | 1073.0 | 659.1 | 300.0 | 1.000279 |
| 4000.0 | 870.7 | 11.9 | 60.8 | 1069.9 | 659.0 | 303.5 | 1.000278 |
| 4500.0 | 862.9 | 11.5 | 59.8 | 1052.4 | 658.4 | 320.9 | 1.000272 |
| 5000.0 | 847.2 | 10.9 | 59.8 | 1035.7 | 657.7 | 333.8 | 1.000267 |
| 5500.0 | 831.7 | 9.4 | 64.4 | 1021.8 | 656.0 | 342.7 | 1.000264 |
| 6000.0 | 816.3 | 8.0 | 69.0 | 1008.1 | 654.3 | 349.0 | 1.000260 |
| 6500.0 | 801.3 | 6.6 | 73.6 | 994.6 | 652.7 | 359.4 | 1.000256 |
| 7000.0 | 786.6 | 5.1 | 78.2 | 981.4 | 651.0 | 6.0 | 1.000252 |
| 7500.0 | 772.1 | 3.7 | 82.8 | 968.4 | 649.3 | 12.0 | 1.000248 |
| 8000.0 | 757.9 | 2.3 | 87.4 | 955.6 | 647.5 | 13.1 | 1.000244 |
| 8500.0 | 743.9 | .8 | 92.0 | 943.0 | 645.8 | 232.8 | 1.000240 |
| 9000.0 | 730.1 | .4 | 94.6 | 927.0 | 645.3 | 229.7 | 1.000237 |
| 9500.0 | 716.4 | .4 | 94.7 | 909.4 | 645.4 | 219.1 | 1.000233 |
| 10000.0 | 702.9 | .2 | 94.1 | 892.9 | 645.2 | 210.2 | 1.000229 |
| 10500.0 | 689.7 | -.3 | 93.8 | 877.8 | 644.5 | 22.4 | 1.000224 |
| 11000.0 | 676.6 | -.9 | 93.5 | 863.2 | 643.8 | 208.7 | 1.000220 |
| 11500.0 | 663.8 | -1.5 | 93.2 | 848.8 | 643.0 | 218.5 | 1.000215 |
| 12000.0 | 651.3 | -2.1 | 92.9 | 834.7 | 642.3 | 224.4 | 1.000211 |
| 12500.0 | 639.0 | -2.7 | 92.6 | 820.9 | 641.5 | 225.0 | 1.000207 |
| 13000.0 | 626.9 | -3.3 | 92.3 | 807.3 | 640.3 | 225.1 | 1.000203 |
| 13500.0 | 615.0 | -4.0 | 92.0 | 793.9 | 640.0 | 223.8 | 1.000199 |
| 14000.0 | 603.1 | -4.8 | 91.6 | 780.9 | 639.0 | 222.9 | 1.000195 |
| 14500.0 | 591.4 | -5.6 | 91.2 | 768.1 | 638.0 | 222.5 | 1.000191 |
| 15000.0 | 580.0 | -6.4 | 90.8 | 755.0 | 637.0 | 222.4 | 1.000187 |
| 15500.0 | 568.7 | -7.2 | 90.5 | 743.3 | 636.1 | 222.4 | 1.000183 |
| 16000.0 | 557.7 | -8.0 | 90.1 | 731.1 | 635.1 | 221.8 | 1.000179 |
| 16500.0 | 546.9 | -8.8 | 89.7 | 719.2 | 634.1 | 221.1 | 1.000176 |
| 17000.0 | 536.3 | -9.5 | 89.3 | 707.5 | 633.1 | 220.6 | 1.000172 |
| 17500.0 | 525.9 | -10.3 | 89.0 | 695.9 | 632.1 | 220.1 | 1.000169 |
| 18000.0 | 515.8 | -11.1 | 88.6 | 684.6 | 631.1 | 220.0 | 1.000165 |
| 18500.0 | 505.8 | -11.9 | 88.2 | 673.4 | 630.2 | 221.0 | 1.000162 |
| 19000.0 | 495.8 | -12.8 | 87.7 | 662.5 | 629.1 | 221.5 | 1.000159 |
| 19500.0 | 486.0 | -13.8 | 86.6 | 651.8 | 627.9 | 222.1 | 1.000155 |
| 20000.0 | 476.3 | -14.7 | 86.0 | 641.2 | 626.7 | 222.3 | 1.000152 |
| 20500.0 | 466.8 | -15.7 | 85.2 | 630.9 | 625.5 | 223.5 | 1.000149 |
| 21000.0 | 457.4 | -16.7 | 84.3 | 620.7 | 624.2 | 223.2 | 1.000146 |
| 21500.0 | 448.3 | -17.7 | 83.5 | 610.7 | 623.0 | 223.9 | 1.000143 |
| 22000.0 | 439.4 | -18.6 | 82.7 | 601.0 | 621.8 | 224.0 | 1.000141 |
| 22500.0 | 430.6 | -19.6 | 81.5 | 591.1 | 620.6 | 225.2 | 1.000138 |
| 23000.0 | 421.8 | -20.7 | 79.1 | 581.5 | 619.3 | 225.0 | 1.000135 |

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 61
ASCENSION NO. 37

UPPER AIR DATA
0580290037
E-28

GEODETTIC COORDINATES
32.89927 LAT DEG
106.40591 LONG DEG

TABLE 11 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 23500.0 | 413.2 | -21.7 | -24.7 | 76.7 | 572.1 | 617.9 | 224.4 | 62.1 | 1.000132 |
| 24000.0 | 404.8 | -22.8 | -26.1 | 74.4 | 562.9 | 616.6 | 224.0 | 62.9 | 1.000130 |
| 24500.0 | 396.4 | -23.9 | -27.4 | 72.5 | 553.7 | 615.2 | 223.5 | 64.0 | 1.000127 |
| 25000.0 | 388.0 | -25.1 | -28.7 | 71.3 | 544.5 | 613.8 | 223.4 | 65.3 | 1.000125 |
| 25500.0 | 379.7 | -26.3 | -30.1 | 70.1 | 535.6 | 612.3 | 223.3 | 66.7 | 1.000122 |
| 26000.0 | 371.7 | -27.5 | -31.4 | 68.9 | 526.8 | 610.8 | 223.4 | 68.7 | 1.000120 |
| 26500.0 | 363.8 | -28.6 | -32.7 | 67.7 | 518.1 | 609.3 | 223.5 | 71.2 | 1.000118 |
| 27000.0 | 356.1 | -29.8 | -34.0 | 66.5 | 509.6 | 607.8 | 223.4 | 73.3 | 1.000116 |
| 27500.0 | 348.5 | -31.0 | -35.3 | 65.3 | 501.3 | 606.3 | 223.5 | 75.3 | 1.000114 |
| 28000.0 | 341.1 | -32.2 | -36.7 | 64.1 | 493.1 | 604.8 | 222.6 | 76.3 | 1.000112 |
| 28500.0 | 333.9 | -33.4 | -38.0 | 63.0 | 485.0 | 603.3 | 221.6 | 76.8 | 1.000110 |
| 29000.0 | 326.8 | -34.6 | -39.3 | 61.8 | 477.1 | 601.8 | 220.5 | 78.5 | 1.000108 |
| 29500.0 | 319.9 | -35.8 | -40.6 | 60.6 | 469.3 | 600.3 | 219.2 | 80.9 | 1.000106 |
| 30000.0 | 313.1 | -36.9 | -41.9 | 59.4 | 461.7 | 598.8 | 218.3 | 84.3 | 1.000104 |
| 30500.0 | 306.5 | -38.1 | -43.2 | 58.2 | 454.2 | 597.3 | 217.8 | 88.6 | 1.000102 |
| 31000.0 | 300.0 | -39.3 | -44.5 | 57.0 | 446.8 | 595.6 | 217.6 | 92.7 | 1.000100 |
| 31500.0 | 293.3 | -40.4 | -45.7 | 56.2 | 439.0 | 594.4 | 217.0 | 96.2 | 1.000098 |
| 32000.0 | 286.8 | -41.5 | -46.9 | 55.5 | 431.3 | 593.0 | 217.7 | 99.5 | 1.000097 |
| 32500.0 | 280.5 | -42.6 | -48.0 | 54.7 | 423.8 | 591.5 | 217.9 | 101.8 | 1.000095 |
| 33000.0 | 274.3 | -43.7 | -49.3 | 53.7** | 416.4 | 590.1 | 218.1 | 104.0 | 1.000093 |
| 33500.0 | 268.1 | -45.3 | -53.1 | 40.4** | 408.8 | 588.1 | 218.6 | 105.4 | 1.000092 |
| 34000.0 | 262.0 | -46.8 | -57.7 | 27.1** | 403.2 | 586.1 | 219.1 | 106.8 | 1.000090 |
| 34500.0 | 256.1 | -48.4 | -64.2 | 13.9** | 396.8 | 584.1 | 219.7 | 109.7 | 1.000088 |
| 35000.0 | 250.3 | -49.9 | -85.6 | .6** | 390.6 | 582.0 | 220.3 | 112.8 | 1.000087 |
| 35500.0 | 244.4 | -51.4 | | | 383.9 | 580.2 | 220.7 | 116.0 | 1.000086 |
| 36000.0 | 238.7 | -52.8 | | | 377.4 | 578.3 | 221.1 | 119.2 | 1.000084 |
| 36500.0 | 233.2 | -54.3 | | | 371.1 | 576.4 | 221.4 | 121.6 | 1.000083 |
| 37000.0 | 227.7 | -55.7 | | | 364.8 | 574.5 | 221.8 | 122.2 | 1.000081 |
| 37500.0 | 222.4 | -57.0 | | | 358.5 | 572.7 | 222.2 | 122.9 | 1.000080 |
| 38000.0 | 217.1 | -58.2 | | | 351.8 | 571.2 | 222.8 | 123.1 | 1.000078 |
| 38500.0 | 211.9 | -59.3 | | | 345.2 | 569.7 | 223.5 | 123.3 | 1.000077 |
| 39000.0 | 206.9 | -59.8 | | | 337.8 | 569.0 | 224.7 | 122.8 | 1.000075 |
| 39500.0 | 201.9 | -58.1 | | | 327.1 | 571.3 | 226.2 | 122.1 | 1.000073 |
| 40000.0 | 197.1 | -57.4 | | | 318.2 | 572.3 | 228.0 | 120.0 | 1.000071 |
| 40500.0 | 192.4 | -57.3 | | | 310.6 | 572.4 | 230.5 | 116.4 | 1.000069 |
| 41000.0 | 187.9 | -57.2 | | | 303.1 | 572.5 | 233.0 | 112.6 | 1.000068 |
| 41500.0 | 183.4 | -57.2 | | | 295.9 | 572.5 | 235.4 | 107.7 | 1.000066 |
| 42000.0 | 179.1 | -57.1 | | | 288.8 | 572.6 | 237.8 | 103.1 | 1.000064 |
| 42500.0 | 174.8 | -57.0 | | | 281.8 | 572.7 | 239.0 | 99.8 | 1.000063 |
| 43000.0 | 170.7 | -57.1 | | | 275.2 | 572.8 | 240.2 | 96.5 | 1.000061 |

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 81 0950 HRS MST
ASCENSION NO. 37

UPPER AIR DATA
0500290037
E-28

GEODETIC COORDINATES
32.69927 LAT NEG
106.40591 LONG NEG

TABLE 11 cont'

| GEO. ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|---------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 43500.0 | 166.6 | -57.4 | | 269.1 | 572.2 | 240.1 | 92.4 | 1.000060 |
| 44000.0 | 162.7 | -57.7 | | 263.1 | 571.0 | 255.5 | 89.7 | 1.000049 |
| 44500.0 | 158.8 | -58.1 | | 257.2 | 571.4 | | | 1.000037 |
| 45000.0 | 155.0 | -58.4 | | 251.5 | 570.9 | | | 1.000026 |
| 45500.0 | 151.3 | -58.7 | | 245.8 | 570.5 | | | 1.000015 |
| 46000.0 | 147.7 | -59.2 | | 240.5 | 569.8 | | | 1.000004 |
| 46500.0 | 144.1 | -59.9 | | 235.5 | 568.9 | | | 1.000002 |
| 47000.0 | 140.6 | -60.6 | | 230.5 | 567.9 | | | 1.000001 |
| 47500.0 | 137.2 | -61.3 | | 225.6 | 567.0 | | | 1.000000 |
| 48000.0 | 133.9 | -62.0 | | 220.9 | 566.1 | | | 1.000000 |
| 48500.0 | 130.6 | -62.7 | | 216.2 | 565.2 | | | 1.000000 |
| 49000.0 | 127.5 | -63.4 | | 211.7 | 564.2 | | | 1.000000 |
| 49500.0 | 124.4 | -64.1 | | 207.2 | 563.3 | | | 1.000000 |
| 50000.0 | 121.4 | -64.8 | | 202.9 | 562.4 | | | 1.000000 |
| 50500.0 | 118.4 | -65.5 | | 198.6 | 561.4 | | | 1.000000 |
| 51000.0 | 115.5 | -66.4 | | 193.8 | 561.5 | | | 1.000000 |
| 51500.0 | 112.7 | -67.0 | | 188.7 | 562.0 | | | 1.000000 |
| 52000.0 | 109.9 | -67.6 | | 183.7 | 562.5 | | | 1.000000 |
| 52500.0 | 107.2 | -68.2 | | 178.8 | 563.1 | | | 1.000000 |
| 53000.0 | 104.6 | -68.8 | | 174.1 | 563.6 | | | 1.000000 |
| 53500.0 | 102.1 | -69.4 | | 169.8 | 563.8 | | | 1.000000 |
| 54000.0 | 99.6 | -70.0 | | 165.1 | 562.9 | | | 1.000000 |
| 54500.0 | 97.1 | -70.6 | | 162.5 | 562.0 | | | 1.000000 |
| 55000.0 | 94.7 | -71.1 | | 159.0 | 561.1 | | | 1.000000 |
| 55500.0 | 92.3 | -71.6 | | 155.5 | 560.3 | | | 1.000000 |
| 56000.0 | 90.1 | -72.0 | | 152.2 | 559.4 | | | 1.000000 |
| 56500.0 | 87.8 | -72.6 | | 148.9 | 558.5 | | | 1.000000 |
| 57000.0 | 85.7 | -73.1 | | 145.6 | 557.7 | | | 1.000000 |
| 57500.0 | 83.5 | -73.6 | | 142.5 | 556.8 | | | 1.000000 |
| 58000.0 | 81.5 | -74.1 | | 138.9 | 556.9 | | | 1.000000 |
| 58500.0 | 79.4 | -74.6 | | 134.9 | 557.9 | | | 1.000000 |
| 59000.0 | 77.5 | -75.1 | | 130.5 | 558.2 | | | 1.000000 |
| 59500.0 | 75.6 | -75.6 | | 126.3 | 558.4 | | | 1.000000 |
| 60000.0 | 73.7 | -76.1 | | 122.7 | 558.6 | | | 1.000000 |
| 60500.0 | 71.9 | -76.6 | | 119.9 | 558.8 | | | 1.000000 |
| 61000.0 | 70.1 | -77.1 | | 117.3 | 559.0 | | | 1.000000 |
| 61500.0 | 68.4 | -77.6 | | 115.0 | 559.2 | | | 1.000000 |
| 62000.0 | 66.7 | -78.1 | | 112.2 | 559.4 | | | 1.000000 |
| 62500.0 | 65.1 | -78.6 | | 109.0 | 559.6 | | | 1.000000 |
| 63000.0 | 63.5 | -79.1 | | 105.0 | 559.8 | | | 1.000000 |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES
32.8927 LAT 1EG
106.40591 LONG DEG

UPPER AIR DATA
058029003/
F-20

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 61 0950 HRS MST
ASCENSION, NO. 37

TABLE 11 cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION (DEGREES (TN)) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 63500.0 | 61.9 | -64.3 | | 10.3 | 563.0 | 344.2 | 13.5 | 1.000023 |
| 64000.0 | 60.4 | -64.5 | | 100.9 | 562.7 | 11.9 | 12.7 | 1.000022 |
| 64500.0 | 59.0 | -64.7 | | 91.5 | 562.5 | 37.1 | 14.7 | 1.000022 |
| 65000.0 | 57.5 | -63.1 | | 95.4 | 564.6 | 49.9 | 16.2 | 1.000021 |
| 65500.0 | 56.1 | -60.2 | | 91.8 | 568.5 | 58.4 | 16.7 | 1.000020 |
| 66000.0 | 54.8 | -60.7 | | 89.8 | 567.9 | 60.3 | 17.6 | 1.000020 |
| 66500.0 | 53.5 | -61.1 | | 87.8 | 567.2 | 66.2 | 16.5 | 1.000020 |
| 67000.0 | 52.2 | -61.6 | | 85.9 | 566.6 | 64.3 | 15.0 | 1.000019 |
| 67500.0 | 50.9 | -62.1 | | 84.0 | 566.0 | 61.9 | 13.6 | 1.000019 |
| 68000.0 | 49.7 | -62.3 | | 82.1 | 565.7 | 55.3 | 12.9 | 1.000018 |
| 68500.0 | 48.5 | -61.8 | | 79.9 | 566.3 | 48.1 | 12.4 | 1.000018 |
| 69000.0 | 47.3 | -61.4 | | 77.9 | 566.9 | 41.1 | 12.2 | 1.000017 |
| 69500.0 | 46.2 | -60.9 | | 75.8 | 567.5 | 35.8 | 12.3 | 1.000017 |
| 70000.0 | 45.1 | -60.5 | | 73.9 | 568.1 | 30.3 | 12.5 | 1.000016 |
| 70500.0 | 44.0 | -60.0 | | 72.0 | 568.7 | 26.5 | 12.8 | 1.000016 |
| 71000.0 | 43.0 | -59.6 | | 70.1 | 569.3 | 23.9 | 12.9 | 1.000016 |
| 71500.0 | 41.9 | -59.1 | | 68.3 | 569.9 | 21.3 | 13.1 | 1.000015 |
| 72000.0 | 40.9 | -58.7 | | 66.5 | 570.5 | 18.8 | 13.3 | 1.000015 |
| 72500.0 | 40.0 | -58.2 | | 64.8 | 571.1 | 20.6 | 12.8 | 1.000014 |
| 73000.0 | 39.0 | -57.8 | | 63.1 | 571.7 | 22.7 | 12.3 | 1.000014 |
| 73500.0 | 38.1 | -57.3 | | 61.5 | 572.3 | 24.9 | 11.9 | 1.000014 |
| 74000.0 | 37.2 | -56.9 | | 59.9 | 572.9 | 31.6 | 10.8 | 1.000013 |
| 74500.0 | 36.3 | -56.7 | | 58.4 | 573.2 | 42.3 | 9.8 | 1.000013 |
| 75000.0 | 35.4 | -56.6 | | 57.0 | 573.3 | 54.9 | 9.1 | 1.000013 |
| 75500.0 | 34.6 | -56.5 | | 55.6 | 573.4 | 67.3 | 9.1 | 1.000012 |
| 76000.0 | 33.8 | -56.4 | | 54.3 | 573.5 | 78.2 | 9.6 | 1.000012 |
| 76500.0 | 33.0 | -56.4 | | 53.0 | 573.6 | 87.3 | 10.4 | 1.000012 |
| 77000.0 | 32.2 | -56.3 | | 51.8 | 573.7 | 94.9 | 11.4 | 1.000012 |
| 77500.0 | 31.5 | -56.2 | | 50.5 | 573.8 | 96.7 | 11.5 | 1.000011 |
| 78000.0 | 30.7 | -56.2 | | 49.3 | 573.9 | 98.4 | 11.6 | 1.000011 |
| 78500.0 | 30.0 | -56.1 | | 48.1 | 574.0 | 100.0 | 11.8 | 1.000011 |
| 79000.0 | 29.3 | -56.0 | | 47.0 | 574.1 | 100.4 | 11.3 | 1.000010 |
| 79500.0 | 28.6 | -55.9 | | 45.9 | 574.2 | 100.1 | 10.4 | 1.000010 |
| 80000.0 | 27.9 | -55.8 | | 44.8 | 574.4 | 99.6 | 9.5 | 1.000010 |
| 80500.0 | 27.3 | -55.7 | | 43.7 | 574.5 | 98.3 | 8.5 | 1.000010 |
| 81000.0 | 26.6 | -55.5 | | 42.7 | 574.7 | 93.7 | 7.3 | 1.000009 |
| 81500.0 | 26.0 | -55.4 | | 41.6 | 574.8 | 87.4 | 6.2 | 1.000009 |
| 82000.0 | 25.4 | -55.3 | | 40.6 | 575.0 | 78.4 | 5.2 | 1.000009 |
| 82500.0 | 24.8 | -55.2 | | 39.7 | 575.1 | 72.9 | 4.9 | 1.000009 |
| 83000.0 | 24.2 | -55.1 | | 38.7 | 575.3 | 63.0 | 4.8 | 1.000009 |

GEODETIC COORDINATES
32.89927 LAT DEG
106.40591 LONG DEG

UPPER AIR DATA
0580290057
E-28

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 81 0950 HRS MST
ASCENSION NO. 37

TABLE 11 Cont'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 83500.0 | 23.7 | -55.0 | | 37.8 | 575.4 | 62.8 | 4.7 | 1.000008 |
| 84000.0 | 23.1 | -54.9 | | 36.9 | 575.6 | 63.1 | 4.9 | 1.000008 |
| 84500.0 | 22.6 | -54.8 | | 36.0 | 575.7 | 73.9 | 5.4 | 1.000008 |
| 85000.0 | 22.0 | -54.7 | | 35.2 | 575.9 | 81.1 | 6.0 | 1.000008 |
| 85500.0 | 21.5 | -54.5 | | 34.3 | 576.0 | 88.8 | 6.8 | 1.000008 |
| 86000.0 | 21.0 | -54.4 | | 33.5 | 576.1 | 89.9 | 8.1 | 1.000007 |
| 86500.0 | 20.5 | -54.3 | | 32.7 | 576.3 | 92.2 | 9.3 | 1.000007 |
| 87000.0 | 20.1 | -54.2 | | 31.9 | 576.4 | 94.0 | 10.6 | 1.000007 |
| 87500.0 | 19.6 | -54.1 | | 31.2 | 576.6 | 92.9 | 11.9 | 1.000007 |
| 88000.0 | 19.1 | -53.9 | | 30.4 | 576.9 | 91.3 | 13.2 | 1.000007 |
| 88500.0 | 18.7 | -53.7 | | 29.7 | 577.1 | 89.9 | 14.6 | 1.000007 |
| 89000.0 | 18.3 | -53.6 | | 29.0 | 577.3 | 90.7 | 13.7 | 1.000006 |
| 89500.0 | 17.8 | -53.4 | | 28.3 | 577.5 | 94.6 | 10.5 | 1.000006 |
| 90000.0 | 17.4 | -53.2 | | 27.6 | 577.8 | 101.8 | 7.4 | 1.000006 |
| 90500.0 | 17.0 | -53.0 | | 26.9 | 578.1 | | | 1.000006 |
| 91000.0 | 16.6 | -52.8 | | 26.3 | 578.3 | | | 1.000006 |
| 91500.0 | 16.2 | -52.6 | | 25.6 | 578.6 | | | 1.000006 |
| 92000.0 | 15.9 | -52.3 | | 25.0 | 578.9 | | | 1.000006 |

STATION ALTITUDE 3912.75 FEET MSL
27 FEB. 81
ASCENSION, NO. 37

MANDATORY LEVELS
0500290057
E-28

GEODETIC COORDINATES
32.89927 LAT DEG
106.40591 LONG DEG

TABLE 12

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. PERCENT | WIND DATA | |
|-----------------------|--------|------------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES CENTIGRADE | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4909. | 11.1 | 3.4 | 59. | 331.8 | 2.6 |
| 800.0 | 6557. | 6.4 | 2.1 | 74. | .3 | 2.3 |
| 750.0 | 8281. | 1.5 | -0. | 90. | 14.8 | .4 |
| 700.0 | 10101. | .2 | -6 | 94. | 209.4 | 23.5 |
| 650.0 | 12045. | -2.2 | -3.2 | 93. | 224.4 | 37.2 |
| 600.0 | 14125. | -5.0 | -6.1 | 91. | 222.8 | 41.4 |
| 550.0 | 16357. | -8.5 | -9.9 | 90. | 221.3 | 53.7 |
| 500.0 | 18768. | -12.4 | -14.0 | 88. | 221.3 | 58.4 |
| 450.0 | 21385. | -17.5 | -19.6 | 84. | 223.8 | 60.7 |
| 400.0 | 24249. | -23.4 | -26.9 | 73. | 223.7 | 63.5 |
| 350.0 | 27408. | -30.8 | -35.1 | 66. | 223.3 | 75.1 |
| 300.0 | 30936. | -39.3 | -44.5 | 57. | 217.6 | 92.6 |
| 250.0 | 34947. | -50.0 | | | 220.3 | 112.8 |
| 200.0 | 39604. | -57.4 | | | 226.7 | 121.9 |
| 175.0 | 42375. | -57.0 | | | 238.9 | 100.0 |
| 150.0 | 45565. | -50.8 | | | 9999.0XX | 9999.0XX |
| 125.0 | 49275. | -63.9 | | | 9999.0 | 9999.0XX |
| 100.0 | 53748. | -64.3 | | | 9999.0 | 9999.0XX |
| 80.0 | 58168. | -68.4 | | | 273.1 | 37.9 |
| 70.0 | 60835. | -64.8 | | | 281.7 | 26.8 |
| 60.0 | 63919. | -64.6 | | | 18.3 | 12.9 |
| 50.0 | 67617. | -62.4 | | | 57.0 | 13.1 |
| 40.0 | 72181. | -58.3 | | | 20.4 | 12.9 |
| 30.0 | 78165. | -56.1 | | | 99.9 | 11.7 |
| 25.0 | 81975. | -55.2 | | | 74.8 | 5.0 |
| 20.0 | 86659. | -54.2 | | | 94.1 | 10.7 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

DATE
ILME